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80 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. [redacted] controller error 2. RTC error	1. Ensure that the keyboard and mouse are connected correctly. 2. Replace the RTC battery.

Table of Contents

Page

Section 1 Introduction

Package Contents 1-1
Mainboard Features 1-2
System Block Diagram 1-6

Section 2 Specification

Mainboard Specification 2-1

Section 3 Installation

Mainboard Layout 3-1
Easy Installation Procedure 3-2
CPU Insertion 3-2
Jumper Settings 3-4
System Memory Configuration 3-5
Rear I/O Fan Installation 3-6
VGA Card Installation 3-7
Device Connectors 3-10
Thermo stick Function 3-17
Power-On/Off (Remote) 3-18
External Modem Ring-in Power ON and
Keyboard Power ON Function (KBPO) 3-18
ACPI S3 (Suspend To RAM) Function 3-19

Section 4 BIOS Setup

Main Menu 4-1
Standard CMOS Setup 4-2
Advanced BIOS Features 4-3
Advanced Chipset Features 4-6
Integrated Peripherals 4-10
Power Management Setup 4-14

PNP/PCI/PCI-E Configuration 4-16
PC Health Status 4-17
Power BIOS Features 4-19
Defaults Menu 4-21
Supervisor/User Password Setting 4-22
Exit Selecting 4-23

Section 5 RAID Configuration
Introduction 5-1
NVidia RAID Features 5-3
Silicon Image SiI3132 RAID Features 5-4
Enable RAID Function 5-5

Section 6 Driver Installation
Easy Driver Installation 6-1
Realtek Sound Manager Quick User guide 6-2

Appendix Appendix A
Update Your System BIOS A-1

Appendix B
NVidia RAID BIOS Utility B-1
Silicon Image SiI3132 RAID BIOS Utility B-4

Appendix C
POST Codes C-1

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Section 1
INTRODUCTION

1-1 Package Contents

Contents

A. Mainboard with paddle card

B. User's manual

C. Floppy drive cable

D. HDD drive cable

E. CD (drivers and utilities)

F. I/O Shield

G. SATA II data and power cable

H. e-SATA cable with bracket

I. SLI bridge

J. IEEE 1394 two ports cable

K. Extra USB2.0 port cable

Powerpack items

L. Thermo Stick cable

M. Mini heatsink

N. Tool Pen

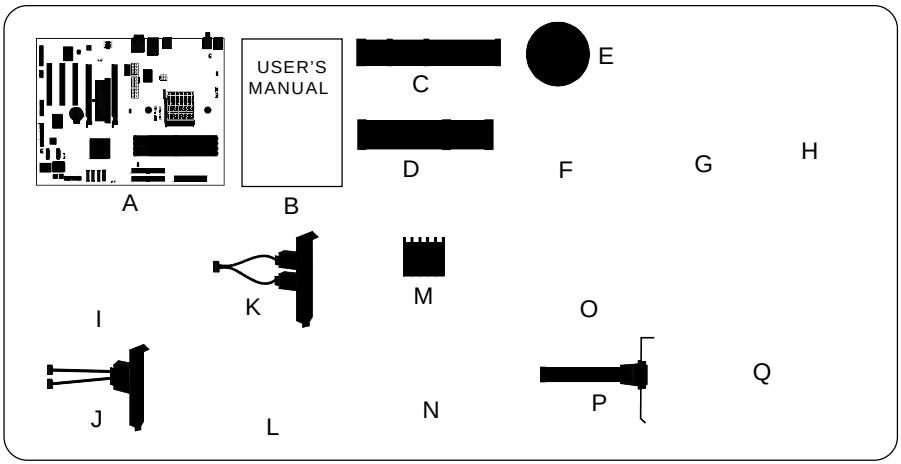
Optional Items

O. Rear I/O Fan

P. Printer port bracket

Q. S/PDIF Module

[redacted]se



1-2 Mainboard Features

[redacted]

★ Socket 939

Socket 939-based motherboards are designed to provide performance enhancements 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 NVIDIA nForce4 SLI chipset, featuring performance and stability with the most innovative technology and features, including the world's first and only native Gigabit Ethernet interface and hardware-optimized Firewall security solution. A chipset designed for the enthusiast class/high-end PCs running AMD Athlon 64 FX 55 processors.

For more details about the NVIDIA nForce4, please visit the NVIDIA Web site at http://www.nvidia.com.

★ NVIDIA SLI

NVIDIA nForce™ 4 SLi™. technology revolutionizes PC performance by combining multiple PCI Express GPUs in a single and scalable system! Gamers and hardcore enthusiasts know that dual GPUs mean increased, supercharged 3D graphics and performance. Get unmatched PC security protection, reliable NVIDIA nForce Storage, and more. NVIDIA nForce4 SLI MCPs set the performance bar that other PCs can only dream of reaching

★ 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 operation and status. This includes CPU temperature, voltage and fan speed in RPMs.

★ GbE LAN

This mainboard is optionally equipped with the NVIDIA Gigabit ethernet LAN feature. The new Gigabit Ethernet LAN allows data transmission at 1,000 megabits per second (Mbps), which runs 10 times faster than conventional 10/100BASE-T Ethernet LANs.

★ Serial ATA II

The second generation SATA interface with double the transferring speed up to 300MB/sec. It supports NCQ to provide faster reading speed for your storage devices. Hot-plug has also become its standard function to plug/unplug whenever you want.

★ SATA RAID

RAID function available on chipset's S-ATA ports.

★ More S-ATA II

An extra S-ATA II controller is added to allow for more S-ATA II ports expansion in the form of Silicon Image SiI3132 complete with RAID function.

★ e-SATA

With this new standard, you can now hot-plug external SATA drives to your system similar to USB devices. With transfer speed up to 6 times faster than USB2.0, RAID capabillity and Port Multiplier function, e-SATA brings unseen before performance to storage out of the box. This function is available only on S-ATA II ports from Silicom Image SiI3132 controller.

★ IEEE 1394

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.

- NVIDIA ActiveArmor ™
  Enhances networks security while delivers the highest system performance by off-loading CPU-intensive packet filtering tasks in hardware, providing users with a PC networking environment that is both fast and secure.

- NV Firewall
  An unprecedented addition design for nForce product, provide high performance & enhanced reliability of PC security solution to the users. The features would be more advanced than many stand-alone firewalls can provide!

- NVIDIA nTune ™ Utility
  Easy, safe, and high performance over-clocking available for NVIDIA nForce. Performance wizards allow automatic tuning for optimal performance or the quietest operation.

[redacted]

[redacted]

& 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.

[redacted]

& 80 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.

& EZ-Button

A handy power-on button located onboard to turn on/off the system easily, especially while debugging or testing the system.

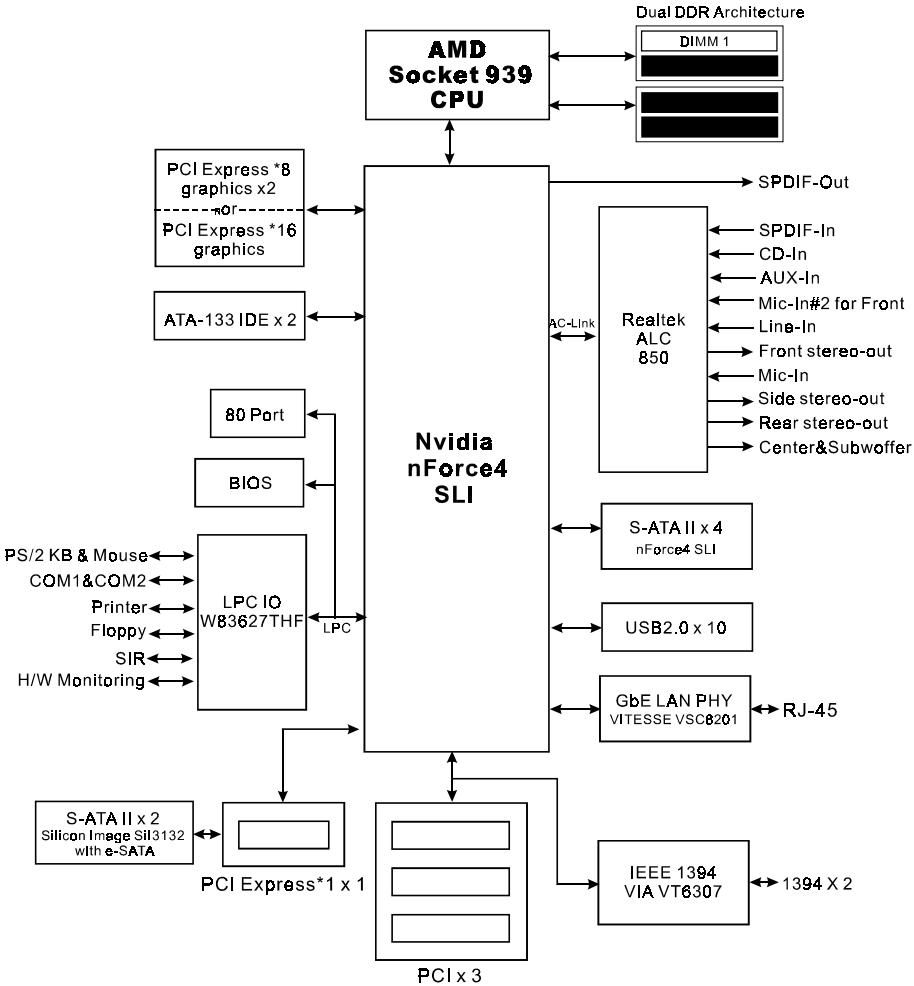
& LEDION

Onboard LED indicators to show the power status CPU, Chipset and DRAM. You know immediately where to look if the system fails to start.

& Thermo Stick

Flexible thermometer to let you measure any temperature by software. Ideal for monitoring VGA card, chipset or even disk drives temperatures. Refer to page 3-17 for details.

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 2.0GT/s Hyper Transport
- Chipset
  - nVidia nForce4 SLI 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
  - Three PCI connectors compliant with PCI v2.2
  - One PCI-E x1 connectors compliant with PCI Express 1.0a
  - Two PCI-E x16 connectors compliant with PCI Express 1.0a to support SLi technology
  - One SLi paddle card connector
- USB
  - Ten USB connectors compliant with USB2.0 from embedded USB controller (4 connectors at rear panel)
- P-ATA IDE
  - Two IDE interface (up to 4 IDE devices) with UDMA-33, ATA-66/100/133 support from embedded IDE controller
- 1394a
  - Two 1394a ports with up to 400Mbps bandwidth from onboard VIA VT6307 1394a controller

- S-ATA RAID
  - Four S-ATA II ports from nForce4 SLi up to 3Gbps bandwidth with nV RAID
- More S-ATA II
  - Two S-ATA II ports from Silicon Image Sil3132 with e-SATA (external SATA) function
- LAN
  - 1Gbps Ethernet from VITESSE VSC8201 LAN PHY supports:
    - nVidia Fireware V2.0
    - nVidia ActiveArmor Secure Network Engine
- Audio
  - Selectable 2, 6 or 8-CH audio from onboard ALC850 AC'97 v2.3 compliant CODEC
    - Support CD-In, AUX-in, S/PDIF-in and S/PDIF-out
    - Optical & Coaxial S/PDIF-out available on rear panel
    - Support Jack detection for fool-proof audio device installation
    - Rear panel audio jacks configuration:

	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
  - Onboard Winbond W83627THF LPC bus I/O controller
  - Legacy peripheral interface for PS/2 keyboard & mouse, FDD, Parallel, Serial and IrDA (v1.0 compliant)
  - Support Hardware Monitoring for fan speed monitoring and CPU temperature sensing
  - Support Smart FAN Control

- BIOS
  - Flash EEPROM with Award Plug&Play BIOS
  - Support ACPI S3 (Suspend To RAM) mode in ACPI compliant O/S
  - Support EZ Boot for fast bootable device selection
  - Support Magic Health for system hardware status report during system boot-up

- Peripheral Interfaces
  - At Rear Panel
    - PS/2 keyboard and mouse ports
    - One S/PDIF-Out Coaxial jack
    - One S/PDIF-Out Optical
    - One RJ45 LAN connector
    - Four USB2.0 ports
    - Six Audio jacks
    - Rear I/O fan (Optional)
  - Onboard connector and pin-header
    - One floppy drive connector
    - Two ATA-100/133 IDE connector
    - Six extra USB2.0 ports
    - One CD-IN and AUX-IN connector
    - One S/PDIF-in/out connector
    - One IR connector
    - One Printer port connector
    - One Serial port (COM1) connector
    - Two 1394a connectors
    - Six S-ATA II connectors
    - Four Fan connectors
    - One Paddle card connector for SLI mode

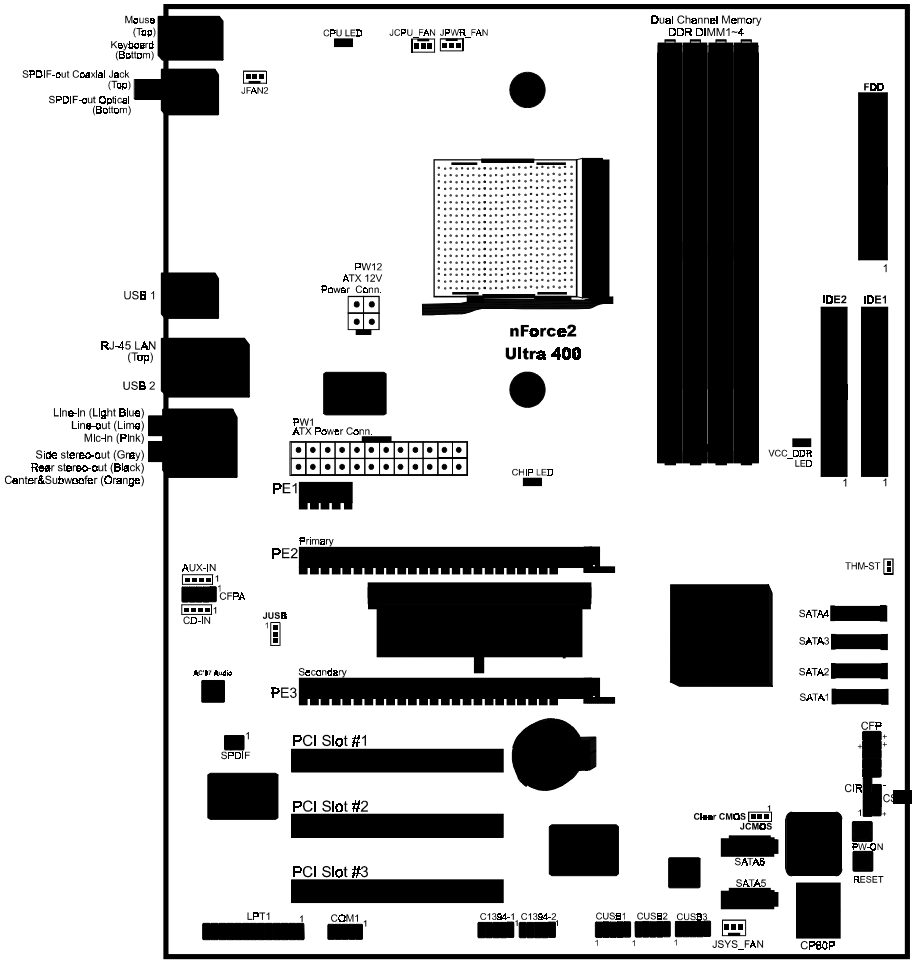
- Front Panel Controller
  - ŠSupports Reset & Soft-Off switches
  - ŠSupports HDD & Power LEDs
  - ŠSupports PC speaker
  - ŠSupports Front Panel Audio connector

- 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
  - ŠOnboard 80 Port LED display for system debugging
  - ŠPowerBIOS for excellent overclocking features:
    - Programmable FSB, PCI-E and PCI Clock output frequency 1MHz fine tuning
    - Support BIOS adjustable CPU multiplier & Core voltage, FSB clock, PCI-E x16 voltage & clock, Chipset voltage, DIMM frequency and voltage settings
  - ŠSupport LEDION – onboard LED power indicator for CPU, DDR and CHIP
  - ŠSupport Thermo Stick function

- Form Factor
  - Š305mm x 245 mm ATX size

Section 3
INSTALLATION

Mainboard Layout

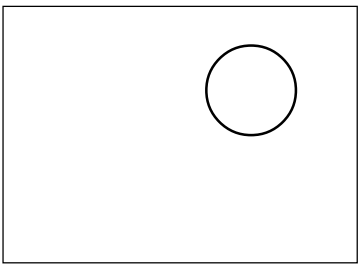


Easy Installation Procedure

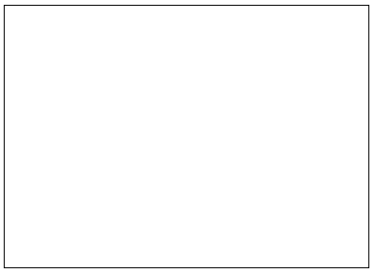
The following must be completed before powering on your new system:

3-1. CPU Installation
3-2. Jumper Settings
3-3. System Memory
3-4. Rear I/O fan installation (optional)
3-5. VGA card installation
3-6. Device Connectors

3-1 CPU Installation



<Figure 1>



<Figure 2>

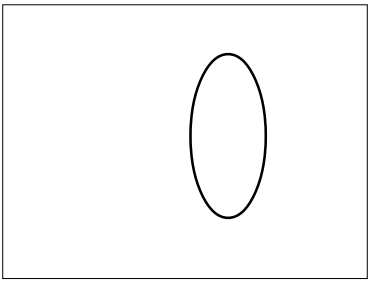
Step 1

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.

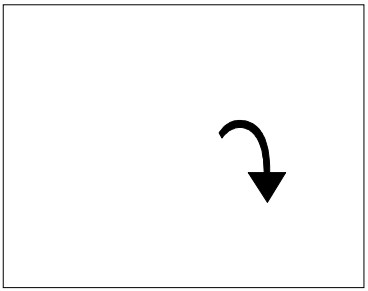
[redacted] by



<Figure 3>

Step 3

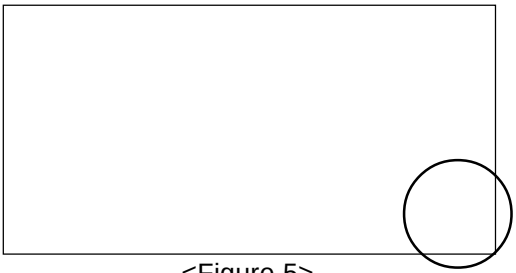
Close the socket by lowering and locking the actuation lever.
Apply thermal compound to the top of the CPU.



<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

nVIDIA *nForce4 SLI* mainboard for AMD Socket 939 based Athlon 64 processor

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These specifications are subject to change without notice.

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