A8N-VM CSM specifications summary

<table>
<thead>
<tr>
<th>CPU</th>
<th>Socket 939 for AMD Athlon™ 64FX/Athlon™ 64 X2/Athlon™ 64 processors Supports AMD Cool 'n' Quiet™ Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipset</td>
<td>Northbridge: NVIDIA® GeForce™ 6150 GPU Southbridge: NVIDIA® nForce™430 MCP</td>
</tr>
<tr>
<td>Front Side Bus</td>
<td>2000/1600 MT/s</td>
</tr>
<tr>
<td>Memory</td>
<td>Dual-channel memory architecture 4 x 184-pin DIMM sockets support up to 4 GB of unbuffered ECC/non-ECC 400/333 MHz DDR memory modules</td>
</tr>
<tr>
<td>Expansion slots</td>
<td>1 x PCI Express™ x16 slot 1 x PCI Express™ x1 slot 2 x PCI slots</td>
</tr>
<tr>
<td>Graphics</td>
<td>Integrated in the NVIDIA® GeForce™ 6150 Graphics Processing Unit (GPU) Dual VGA output: DVI-D/TV-OUT, RGB High definition video processing with maximum resolution of 1920 x 1440 pixels for RGB display</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> DVI-D only supports digital display. You cannot convert DVI-D to output RGB signal to CRT display.</td>
</tr>
<tr>
<td>Storage</td>
<td>NVIDIA® nForce™430 media and communications processor (MCP) supports:</td>
</tr>
<tr>
<td></td>
<td>- 2 x Ultra DMA 133/100/66/33 interfaces for four hard disk drives</td>
</tr>
<tr>
<td></td>
<td>- 4 x Serial ATA I/Serial ATA II 3 Gb/s hard disk drives supporting RAID 0, RAID 1, RAID 0+1, and RAID 5 configuration</td>
</tr>
<tr>
<td>High Definition Audio</td>
<td>SoundMAX® ADI AD1986A 5.1-channel CODEC Supports Jack Sensing technology S/PDIF out interface</td>
</tr>
<tr>
<td>LAN</td>
<td>NVIDIA® nForce™430 built-in Gigabit MAC with external Marvell® 88E1111 PHY supports:</td>
</tr>
<tr>
<td></td>
<td>- NV Active Armor</td>
</tr>
<tr>
<td></td>
<td>- NV Firewall</td>
</tr>
<tr>
<td>IEEE 1394</td>
<td>VIA 6307 IEEE 1394a controller supports: 2 x IEEE 1394a ports</td>
</tr>
</tbody>
</table>

(continued on the next page)
A8N-VM CSM specifications summary

<table>
<thead>
<tr>
<th>USB</th>
<th>Supports up to 8 USB 2.0 ports</th>
</tr>
</thead>
</table>
| Special features | ASUS Q-Fan  
ASUS C.P.R. (CPU Parameter Recall)  
ASUS CrashFree BIOS 2  
ASUS EZ Flash  
ASUS MyLogo2™  
Stepless Frequency Selection (SFS) allows FSB tuning from 200 MHz to 240 MHz at 1 MHz increment |
| Note: | ASUS CrashFree BIOS 2 and ASUS EZ Flash only support VGA/RGB output. |
| BIOS features | 4 Mb Flash ROM, AMI BIOS, PnP, DMI, WfM2.0, ACPI 2.0a, SM BIOS 2.3 |
| Rear panel | 1 x Parallel port  
1 x IEEE 1394a port  
1 x LAN (RJ-45) port  
4 x USB 2.0 ports  
1 x VGA/RGB Out port  
1 x VGA/DVI-D port  
1 x PS/2 keyboard port  
1 x PS/2 mouse port  
6-channel audio ports |
| Internal connectors | 1 x IEEE 1394a connector  
1 x Front panel audio connector  
1 x CD audio in connector  
1 x Chassis intrusion connector  
1 x Serial port connector  
1 x CPU fan connector  
1 x Chassis fan connector  
1 x Floppy disk drive connector  
1 x Primary IDE connector  
1 x Secondary IDE connector  
1 x S/PDIF Out connector  
1 x TV Out connector  
4 x Serial ATA connectors  
2 x USB 2.0 connectors for four additional USB 2.0 ports  
24-pin ATX power connector  
4-pin x ATX 12V power connector  
System panel connector |
| Power Requirement | ATX power supply (with 24-pin and 4-pin 12 V plugs)  
ATX 12 V 2.0 compliant |
| Form Factor | uATX: 9.6 in. x 9.6 in. (24.5cm x 24.5cm) |

(continued on the next page)
## A8N-VM CSM specifications summary

<table>
<thead>
<tr>
<th>Manageability</th>
<th>WfM2.0, DMI 2.0, WOL by PME, WOR by PME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support CD contents</strong></td>
<td></td>
</tr>
<tr>
<td>Device drivers</td>
<td></td>
</tr>
<tr>
<td>ASUS PC Probe II</td>
<td></td>
</tr>
<tr>
<td>AMD Cool ‘n’Quiet™ utility</td>
<td></td>
</tr>
<tr>
<td>ASUS Live Update utility</td>
<td></td>
</tr>
<tr>
<td>Anti-virus software (OEM version)</td>
<td></td>
</tr>
</tbody>
</table>

*Specifications are subject to change without notice.*
This chapter describes the motherboard features and the new technologies it supports.
1.1 Welcome!

Thank you for buying an ASUS® A8N-VM CSM motherboard!

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

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

1.2 Package contents

Check your motherboard package for the following items.

<table>
<thead>
<tr>
<th>Motherboard</th>
<th>ASUS A8N-VM CSM motherboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cables</td>
<td>2 x Serial ATA signal cables</td>
</tr>
<tr>
<td></td>
<td>1 x Serial ATA power cable for two Serial ATA devices</td>
</tr>
<tr>
<td></td>
<td>1 x IEEE 1394 1-port module</td>
</tr>
<tr>
<td></td>
<td>1 x Ultra DMA 133/100/66 cable</td>
</tr>
<tr>
<td></td>
<td>1 x IDE cable</td>
</tr>
<tr>
<td></td>
<td>1 x Floppy disk drive cable</td>
</tr>
<tr>
<td>Accessory</td>
<td>I/O shield</td>
</tr>
<tr>
<td>Application CD</td>
<td>ASUS motherboard support CD</td>
</tr>
<tr>
<td>Documentation</td>
<td>User guide</td>
</tr>
</tbody>
</table>

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

1.3 Special features

1.3.1 Product highlights

Latest processor technology

The motherboard comes with a 939-pin surface mount, Zero Insertion Force (ZIF) socket that supports AMD Athlon™ 64/Athlon™ 64 FX/Athlon™ 64 X2 processors. With an integrated low-latency high-bandwidth memory controller and a highly-scalable HyperTransport™ technology-based system bus, the motherboard provides a powerful platform for your diverse computing needs, increased office productivity, and enhanced digital media experience. See page 1-9.
NVIDIA® GeForce™ 6150 GPU

and NVIDIA® nForce™ 430 MCP chipsets

The NVIDIA® GeForce™ 6150 graphics processing unit (GPU) Northbridge supports Microsoft® DirectX 9.0 Shader Model 3.0, dual VGA out (RGB and DVI-D), NVIDIA® PureVideo Technology with unprecedented integrated video quality, TV-out, and PCI Express interface.

The NVIDIA® nForce™ 430 media and communications processor (MCP) Southbridge delivers NVIDIA® Gigabit LAN with ActiveArmor Firewall for secure networking, and NVIDIA® MediaShield storage management technology allowing easy RAID configuration (RAID 0, RAID 1, RAID 0+1, and RAID 5) for Serial ATA II.

Dual-channel DDR memory support

Employing the Double Data Rate (DDR) memory technology, the motherboard supports up to 4 GB of system memory using DDR400/333 DIMMs. The ultra-fast 400 MHz memory bus delivers the required bandwidth for the latest 3D graphics, multimedia, and Internet applications. See page 1-11 for details.

PCI Express™ interface

The motherboard fully supports PCI Express, the latest I/O interconnect technology that speeds up the PCI bus. PCI Express features point-to-point serial interconnections between devices and allows higher clockspeeds by carrying data in packets. This high speed interface is software compatible with existing PCI specifications. See page 1-16 for details.

Serial ATA II technology

The motherboard supports the Serial ATA 3 Gb/s technology through the Serial ATA interfaces and the NVIDIA® nForce™430 MCP Southbridge. The Serial ATA II 3 Gb/s specification provides twice the bandwidth of the current Serial ATA products with a host of new features, including Native Command Queueing (NCQ), and Power Management (PM) Implementation Algorithm. Serial ATA allows for thinner, more flexible cables with lower pin count, reduced voltage requirement. See page 1-24 for details.

The Hot Swap function is supported only in RAID mode.
S/PDIF digital sound ready

The motherboard supports the S/PDIF Out function through the S/PDIF interface at midboard. The S/PDIF technology turns your computer into a high-end entertainment system with digital connectivity to powerful audio and speaker systems. See page 1-25 for details.

USB 2.0 technology

The motherboard implements the Universal Serial Bus (USB) 2.0 specification, dramatically increasing the connection speed from the 12 Mbps bandwidth on USB 1.1 to a fast 480 Mbps on USB 2.0. USB 2.0 is backward compatible with USB 1.1. See pages 1-18 and 1-26 for details.

IEEE 1394a support

The IEEE 1394a interface provides high-speed and flexible PC connectivity to a wide range of peripherals and devices compliant to IEEE 1394a standards. The IEEE 1394a interface allows up to 400 Mbps transfer rates through simple, low-cost, high-bandwidth asynchronous (real-time) data interfacing between computers, peripherals, and consumer electronic devices such as camcorders, VCRs, printers, TVs, and digital cameras. See page 1-27 for details.
1.3.2 Innovative ASUS features

**ASUS EZ Flash BIOS**

With the ASUS EZ Flash, you can easily update the system BIOS even before loading the operating system. No need to use a DOS-based utility or boot from a floppy disk. See page 2-3 for details.

**ASUS Q-Fan technology**

The ASUS Q-Fan technology smartly adjusts the CPU fan speed according to the system loading to ensure quiet, cool, and efficient operation. See page 2-31 for details.

**ASUS MyLogo2™**

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

**C.P.R. (CPU Parameter Recall)**

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

**ASUS CrashFree BIOS 2**

This feature allows you to restore the original BIOS data from the support CD in case when the BIOS codes and data are corrupted. This protection eliminates the need to buy a replacement ROM chip.
Chapter 1: Product introduction

1.4 Before you proceed

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

- Unplug the power cord from the wall socket before touching any component.
- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
- **Before you install or remove any component**, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

Onboard LED

The motherboard comes with a standby power LED that lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.

![Onboard LED Illustration]
1.5  Motherboard overview

1.5.1  Motherboard layout
1.5.2 Placement direction

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

1.5.3 Screw holes

Place eight (8) screws into the holes indicated by circles to secure the motherboard to the chassis.

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

![Diagram of motherboard with screw holes indicated](attachment:image.png)

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

The motherboard comes with a surface mount 939-pin Zero Insertion Force (ZIF) socket designed for the AMD Athlon™ 64FX/AMD Athlon™ 64 / Athlon™ 64 X2 processor.

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

Take note of the marked corner (with gold triangle) on the CPU. This mark should match a specific corner on the socket to ensure correct installation.

Installing the CPU

To install a CPU.

1. Locate the 939-pin ZIF socket on the motherboard.

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

---

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