

BUILDING NEW DIG SIG COMPUTER WITH A BUDGET

Components:

- **Motherboard**
- **CPU**
- **Tower case**
- **Ram**
- **Video card**
- **Operating System**
- **Hard Drive**
- **Optical Drive**

Motherboard: Asus A8N5X, nVidia chip set. Selected for the PCI-E and PCI connectors to support older components from the old machine and the newer components suitable for using adobe Photoshop photo editing software programs.

CPU: AMD Athlon 64 3500 (2.2Gig). Selected within range of budget expense.

Tower case: Antec TX640B. Selected for cooling configuration and Power Supply wattage and motherboard P/S connection.

Ram: 1 Gig, Type ordered to support the requirements of the motherboard. Manual was consulted before purchase.

Video card: e-GeForceVGA EVGA 7300GS DDR2 256, card meets fast screen refresh rate wanted and an eye toward the requirements of the next generation operating system, Vista.

Operating System: Windows XP Home

Hard Drive: Seagate Serial ATA/300 300Gig. 5 year warranty.

Optical Drive: Pioneer DVD/CD DVR-710/111d.

Note: Web sites can be visited to aid in determining the selection of system components.

Assemble of components: Note, grounding strap is recommended during handling of all components.

Step 1. The case was opened to check the rear I/O shield. Most of these must be replaced with the proper shield from the motherboard box.

A8N5X specifications summary

CPU	Socket 939 for AMD Athlon™ 64 X2/AMD Athlon™ 64FX and AMD Athlon™ 64 processors Supports AMD 64 architecture that enables simultaneous 32-bit and 64-bit architecture Supports AMD® Cool 'n' Quiet! Technology
Chipset	NVIDIA® nForce™ 4
System Bus	1600/2000 MT per second
Memory	Dual-channel memory architecture 4 x 184-pin DIMM sockets support ECC/non-ECC unbuffered 400/333/266 MHz DDR memory modules Supports up to 4 GB system memory
Expansion slots	1 x PCI Express x16 slots 2 x PCI Express x1 slots 1 x PCI Express x4 slot (Note: Supports a total bandwidth of 1GB/s) 3 x PCI slots
Storage	NVIDIA® nForce™ 4 chipset supports: - 2 x Ultra DMA 133/100/66/33 - 4 x Serial ATA with RAID 0, RAID 1, RAID 1+0, and JBOD that spans across the Serial ATA and Parallel ATA drives
Overclocking	AI NOS™ (Non-Delay Overclocking System) ASUS AI Overclocking (Intelligent CPU frequency tuner) ASUS PEG Link Fixed PCI Express/PCI/SATA frequencies ASUS C.P.R. (CPU Parameter Recall) Precision Tweaker supports: - DIMM voltage: 9-step DRAM voltage control - Core voltage: Adjustable CPU voltage at 0.0125 increment - PCI Express Frequency: Allows 1MHz increment from 100MHz to 200MHz - Stepless Frequency Selection(SFS) allows 1MHz increment from 200 MHz to 400 MHz
Special features	ASUS EZFlash ASUS Q-Fan ASUS CrashFree BIOS 2 ASUS Multi-language BIOS ASUS MyLogo2 ASUS Instant Music

A8N5X specifications summary

Internal connectors	1 x Floppy disk drive connector 2 x IDE connectors 4 x Serial ATA connectors 1 x CPU fan connector 1 x Power fan connector 2 x Chassis fan connector 1 x Chipset fan connector 1 x Serial port connector (COM port) 1 x 24-pin ATX power connector 1 x 4-pin ATX 12 V power connector 3 x USB 2.0 connectors for 6 additional USB 2.0 ports 1 x Internal audio connectors (CD/AUX) 1 x GAME/MIDI connector 1 x Chassis intrusion connector 1 x Front panel audio connector System panel connector
LAN	NVIDIA® nForce™ 4 built-in Gigabit MAC with external Marvell® PHY supports: - NV Firewall™ AI NET2
AI Audio	Realtek® ALC850 8-channel CODEC 1 x Coaxial S/PDIF out port 1 x Optical S/PDIF out port Supports Universal Audio Jack (UAAJ™) Technology Supports Audio Sensing and Enumeration Technology
USB	Supports up to 10 USB 2.0 ports
Rear panel	1 x Parallel port 1 x LAN (RJ-45) port 4 x USB 2.0 ports 1 x Optical S/PDIF out port 1 x Coaxial S/PDIF out port 1 x PS/2 keyboard port 1 x PS/2 mouse port 8-channel audio ports
BIOS features	4 Mb Flash ROM, Phoenix-Award BIOS, PnP, DMi2.0, Wm2.0, SM BIOS 2.3
Power Requirement	ATX power supply (with 24-pin and 4-pin 12 V plugs) ATX 12 V 2.0 compliant

A8N5X specifications summary

Form Factor	ATX form factor: 12 in x 9.6 in (30.5 cm x 24.4 cm)
Support CD contents	Device drivers ASUS PC Probe II ASUS Live Update utility ASUS Cool'n'Quiet! utility Anti-virus utility (OEM version) NVIDIA® nTune™ utility

Step 2. Mounting the board standoffs to match the mounting holes in the motherboard.

Step 3. Mount the CPU and the RAM on the board. Support the board on a solid flat surface to prevent flexing the board. Use the board manual for proper orientation.

Step 4. Connect the wire harnesses to the contacts on the motherboard. Using the board manual for proper locations. It is a good idea to make these connections before your attempt to mount the board inside the case. IDE cables, power connector can be connected after the board is installed in the case. See example below. Note that not all case cables will have a location to be connected on the motherboard. Just ignore these cables.

Step 5. Install the board and secure with the screws provided. Take note that the I/O connectors on the board are not obstructed by the shield grounding clips. Clips can be bent to clear any obstruction.

Step 6. Proceed with installing hard drives, CD drives, etc.

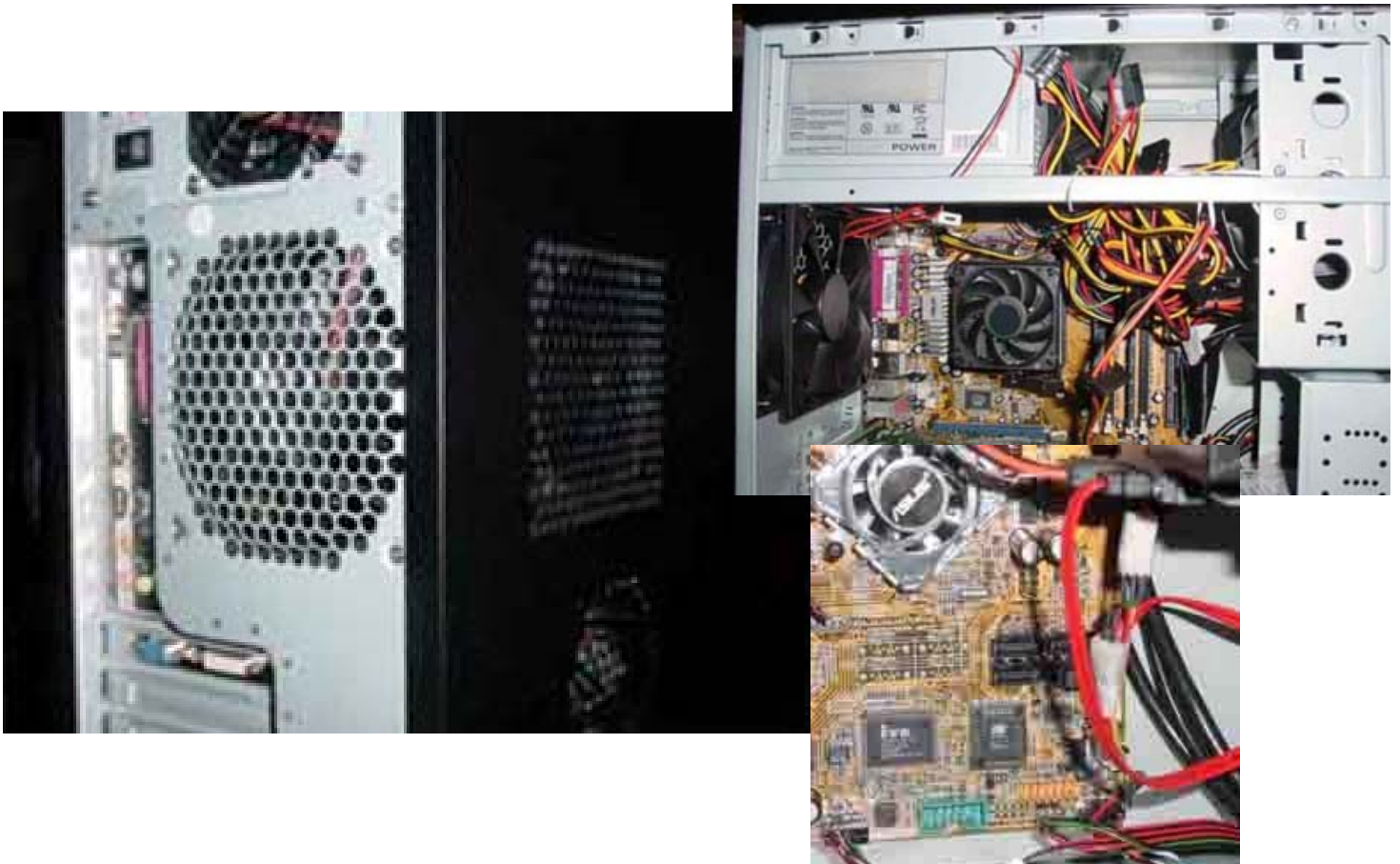
Step 7. Install pc cards in respective connectors.

Step 8. Install and connect cables for drives and case fans. A good plan is to tie up the cables so that they don't obstruct air flow to devices.

Step 9. I generally apply power to the case just long enough to check that all the fans are running. I also enter the system setup screen (BIOS) to check to see if the drives are recognized before I close the case. In addition I set the Boot process to boot to a CD first. That way if installing WinXP as the operating system that disk will both partition and format the new hard disk.

Step 10. Power up and install the operating system and if required install any drivers from CD's provided with the devices.

Step 11. Using the CD that came with the motherboard, install the features there on. Check in Device Manager to see that all device are running properly. You may now install any programs you wish.



Tech Web Sites:

- <http://www.pcguide.com/index.htm> - how-tos
- <http://www.pcguide.com/byop/index.htm> - how to build your own PC
- * - <http://www.techbuilder.org/> - how-tos
- * - <http://www.pcstats.com/> - detailed Reviews
- <http://www.tomshardware.com/> - Reviews and Troubleshooting as well as overclocking tips
- <http://www.sysopt.com/> - performance tips
- <http://pchell.com/> - troubleshooting
- <http://slashdot.org/> - nerd site

Shopping Web Sites –Virtual

- * - <http://www.buy.com/>
- <http://www.cdw.com/>
- * - <http://www.newegg.com/>
- * - <http://www.onsale.com/>
- <http://www.pcclub.com/>
- <http://www.pcconnection.com>
- <http://www.tigerdirect.com/>

Shopping Web Sites – Local (Store & Virtual)

- <http://www.bestbuy.com/>
- * - <http://www.circuitcity.com/>
- <http://www.compusaveinc.net/>
- <http://www.computersonics.com/>
- <http://www.computerstop.com/>
- <http://shop.hdnw.com/>
- * - <http://www.staples.com/>
- * - <http://www.compusa.com/>
- <http://www.outpost.com/> - Fryes
- <http://www.infotechnow.com/>
- <http://www.officedepot.com/>
- <http://www.go2summit.com/>

Component Web Sites

- <http://www.amd.com/us-en/> - AMD CPUs
- <http://www.antec.com/International/Welcome.php> - Quality cases, power Supplies, etc.
- <http://www.accessorytown.com/> - Belkin accessories
- <http://www.enermaxusa.com/> - Power supplies
- <http://www.crucial.com/> - RAM manufacturer
- <http://usa.asus.com/> - Motherboard manufacturer

Other Web Sites

- <http://www.carputerclub.com/> computer for the car
- <http://www.timgrey.com/> - Digital Imaging expert
- <http://store.apple.com> – Apple products
- <http://www.download.com/> - Software download site

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