

CPU

COMPUTER POWER USER



QUAKECON MOD CONTEST
SO GOOD THERE WERE 3 WINNERS

SUPERMICRO[®]

5038AD-T

SERVER-CLASS RELIABILITY, SERIOUS FUN



Supermicro 5038AD-T & C7Z87-OCE

Performance You Can Depend On



If you go to or host many LAN parties, you've seen this happen more than once: A gamer packs his rig and a comfortable chair in his car, drives a few hours to spend an entire weekend of bliss with friends at a nearby LAN party, hauls all his stuff in and sets it up, and then tries to start his machine, only to find that—at least for the moment—his PC is a 75-pound paperweight.

Maybe his problem is a simple, quick fix, maybe it's catastrophic. Either way, instead of slapping on his headset and setting off a weekend of fun, this poor guy is frantically troubleshooting and hoping that he hasn't driven all that way only to pack up and go home again, minus one functioning gaming rig.

The bottom line is that durable, dependable components aren't just for servers. Getting parts you can rely on makes sense whether you're building a

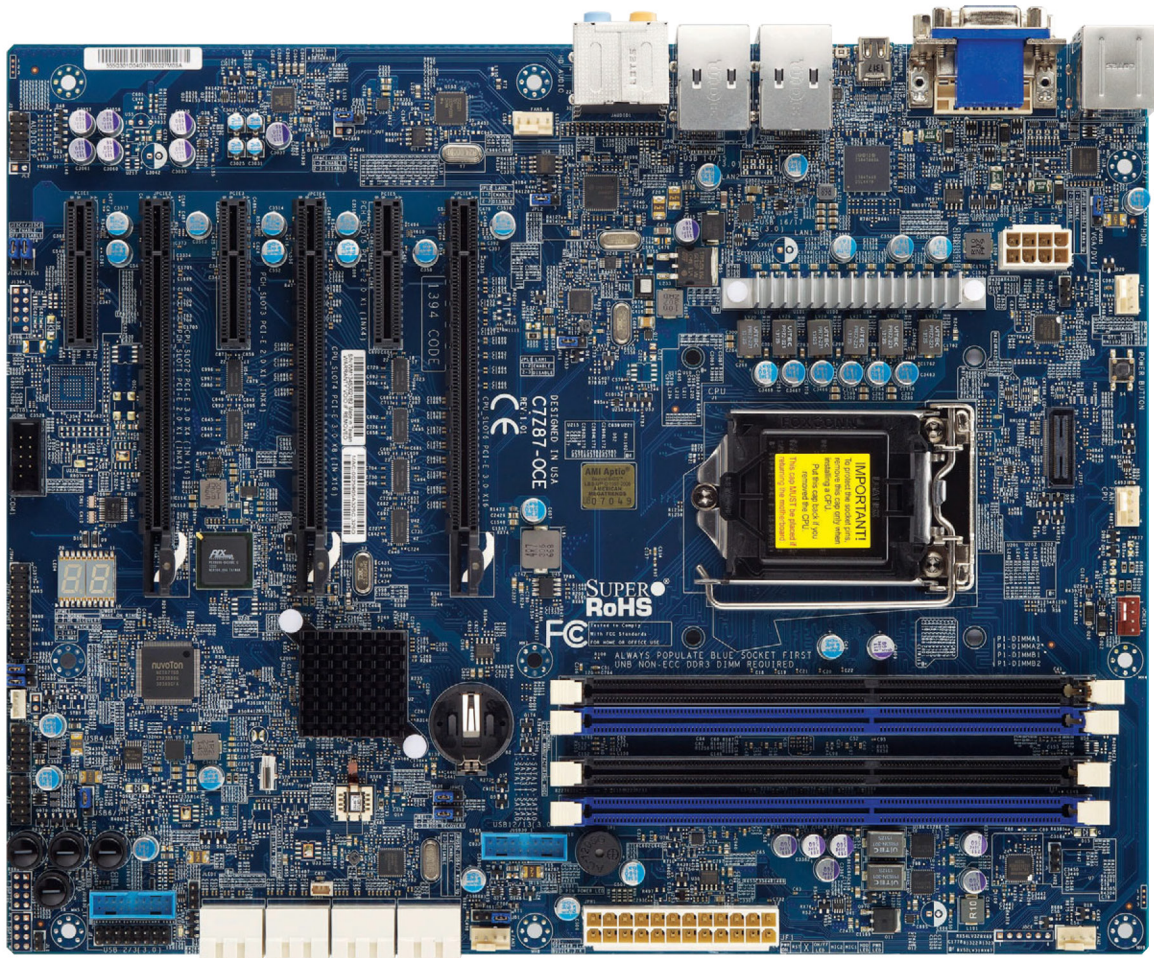
computer for serious business or serious fun, and Supermicro understands this.

Supermicro has built a reputation for rock-solid servers and server components over the years; people in datacenters and corporate IT environments know this. When downtime is the difference between big sales and big losses, smart techs choose motherboards, power supplies, and other parts that they know won't let them down. They choose components from Supermicro.

Changing The Game

Supermicro decided to offer gaming motherboards and chassis based on feedback from their server and workstation customers.

"We listened to our customers, who over the years have helped us become first to market with new types of servers. And practically all of them said that they



were looking for a dependable gaming motherboard and system that can handle the power that their cards require,” says Supermicro’s Leo Lin. “We have tested thousands of motherboard components and only a selected few components would pass our quality tests. We use these same high-quality server components with our gaming motherboards.”

The results are gaming PC components that have what Supermicro refers to as “server-level power design.”

“Server-level power design is our servers’ ability to handle the power needed to run a server 24/7,” says Lin. “Each component and design must withstand this pace. In the server world, there is no room for downtime, so our designs have higher power efficiency (green power) and higher density. This

will deliver lower operating temperatures, even at full loads.”

Haswell On Board

Dependability is crucial, but Supermicro also knows that you are looking for the latest technology. That’s why the company’s C7Z87-OCE motherboard (and by extension the 5038AD-T) was built to work with Intel’s 4th Generation Haswell Core processors.

The C7Z87-OCE takes full advantage of the strengths of the Z87 platform, and is packed with features near and dear to DIY builders’ hearts, such as one-touch overclocking buttons (OC1 gives a 15% boost, OC2 gives a 23% boost, and OC3 provides a user-defined overclock), dual Gigabit Ethernet, support for eight USB 3.0 ports and eight SATA 6Gbps ports

(compared to six of each on most boards), dual bootable BIOSes, and onboard power controls and LED debug readout.

The C7Z87-OCE is also the heart of Supermicro’s 5038AD-T, the foundation of a gaming rig that also consists of Supermicro’s CSE-732G-903B chassis with a 900-watt 80 PLUS Gold-level power supply. The case sports a steel mesh left side panel window, a pair of sturdy carry handles (very handy for LAN parties), and interior lighting controls that lets indicate hardware acceleration status.

The Total Package

Built with server-level power design and the latest technologies and features, Supermicro’s 5038AD-T is your first step toward the most dependable, highest-performing system you have ever built. ■

**Super Workstation 5038AD-T**

Supermicro

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Supermicro Super Workstation 5038AD-T

The SuperServer 5038AD-T is a bare-bones gaming system from Supermicro that includes a C7Z87-OCE motherboard, which we cover elsewhere in this issue, as well as a 900-watt power supply that is 80 PLUS Gold-certified. Let's take a look at Supermicro's first attempt at courting gamers, based on Supermicro's strong server foundation and reputation.

The midtower case has a metal mesh side panel window, and Supermicro includes a blue LED light strip on the inside of the case to illuminate its interior. LED lights are also built into the front panel, which delivers a subtle glowing effect. Supermicro engineered the case with hinged covers that you can swing open to access the two 5.25-inch optical drive bays and one 3.5-inch device bay. The system also has space below for two hot-swap 3.5-inch HDD bays and optional four hot-swap 2.5-inch HDD/SSD bays. The top of the chassis provides two USB 3.0 ports, two USB 2.0 ports, an eSATA port, and

analog audio I/O. Two large, long handles run along the top panel, too, which makes the case easy to carry.

On the interior, another drive cage provides you with hot-swap connectivity for three 3.5-inch HDDs, which is handy because you won't have to bother routing any power or SATA cables to the bay. Beneath the drive bay, Supermicro installed a 120mm fan that moves air over your build's graphics cards. A 120mm rear fan is also included to exhaust hot air from the interior. The power supply is located at the top rear of the case, and there are cutouts in the motherboard tray where you can route the excess cabling.

Supermicro packs its 900-watt PWS-903-PQ power supply into the Super Workstation 5038AD-T. The PSU boasts four 12V rails that each carry 25A of current. The 5V and 3.3V rails each can handle up to 25A, too. The power supply's cables are all hardwired, and there's support for multiple graphics

cards, courtesy of two PCI-E 6+2-pin and two 6-pin connectors. The power supply offers four Molex connectors, one of which is required to connect to the Molex input that powers all of the hot-swap SATA ports. The 900-watt power supply also offers two SATA power connectors, perfect for powering optical drives.

With its cool LED lighting effects, this attractive midtower has a look that will help it fit right in at a LAN party, and the sturdy carrying handles will help you take it there. You also have some component flexibility, as you'll be able to choose what processor, graphics card, memory, and storage to add. The hot-swappable features make it easy for enthusiasts with large digital collections can quickly switch out backup drives and portable storage. Armed with a C7Z87-OCE motherboard and a 900-watt 80 PLUS Gold-certified PSU, the SuperServer 5038AD-T lays a solid foundation to build a mean gaming rig. ■

BY NATHAN LAKE

Specs: Dimensions: 20.08 x 8.66 x 22.8 inches (HxWxD); Motherboard: Supermicro C7Z87-OCE; Power Supply: Supermicro PWS-903-PQ; Bays: 2 5.25-inch external, 1 3.5-inch external, 3 3.5-inch internal HDD; Optional bays: 4 2.5-inch hot-swap HDD/SSD; Fans: 1 120mm in HDD rack, 1 120mm rear; Ports: 2 USB 3.0, 2 USB 2.0, 1 eSATA, audio I/O

Supermicro C7Z87-OCE

Supermicro products have a reputation for reliability and stability, something that's important for both servers and gaming systems. And although Supermicro has long been a player in the server side, the company hasn't made much of a foray into the gaming arena. The C7Z87-OCE is set to change that, as it gives you all of the goodness of Intel's Z87 chipset with the polish and attention to detail that gamers look for in a motherboard.

The C7Z87-OCE is engineered with server-grade components, including all solid capacitors, ESD (electrostatic discharge) protection, ferrite chokes, and support for working temperatures up to 50 C. Supermicro also provides you with onboard tools for overclocking your CPU. There are three buttons where you can quickly lock in the overclock settings you'd like to use. The bottom button automatically boosts the processor's speed by 15%, and the middle button down increases the processor speed by 23%. The top button utilizes custom settings you configure in the BIOS. There's also a clear CMOS button to quickly reset BIOS settings to their default if the board won't POST. A dual BIOS is provided for redundancy in the event a BIOS fails or becomes corrupted. To diagnose hardware problems, Supermicro includes a Post Code display.

For memory support, you'll find four DIMMs that combined can handle 32GB of DDR3 clocked up to 3,000MHz. In the BIOS, you can tune memory voltage in 0.01V increments all the way up to 1.75V, and you can adjust the reference clock 1MHz at a time. Supermicro also allows you to overclock graphics cards plugged into the three PCI-E x16 slots on the motherboard. Again, clock tuning can be as fine as 1MHz.

The C7Z87-OCE supports up to three-way CrossFire, though you won't find support for SLI. This Z87 motherboard relies

on the 16 PCI-E lanes built into Haswell processors. As such, three-way CrossFire runs at x8/x4/x4. In two-way CrossFire, both cards run at x8 speed. A single GPU will run at the full x16 speed. If you opt to use the Haswell processor's graphics, you'll be able to choose among the VGA, DisplayPort (via the Thunderbolt port), DVI, and HDMI ports on the C7Z87-OCE's rear I/O.

For wired connectivity, Supermicro includes two Ethernet ports. One is powered by Intel's i217V controller, while the other uses the i210AT controller. Supermicro designed the motherboard to support lots of storage, as there are eight 6Gbps SATA ports, and six of the ports support RAID 0, 1, 5, and 10 configurations. The top two SATA ports support RAID 0 and 1 setups. There are a total of 14 USB ports—eight USB 3.0 ports (four rear, four internal) and six USB 2.0 ports (two rear, four internal). The Realtek ALC1150 controller delivers 7.1-channel audio.

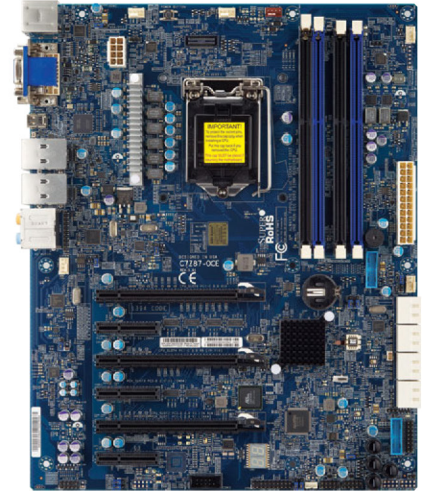
We tested the C7Z87-OCE with an Intel Core i7-4770K (run at stock clocks), a GIGABYTE's GV-N760OC-4GD, and 8GB of ADATA DDR3-2400. We saw an overall score of 2986 in 3DMark Professional's Fire Strike Extreme test and 31.2fps in Aliens vs. Predator at 2,560 x 1,600 on the highest quality settings. In our CPU-intensive benchmarks, numbers for the 4770K produced a score of 8.07 in Cinebench 11.5 and POV-Ray 3.7 Beta mark of 1,535.5.

The C7Z87-OCE is a good fit for gamers looking to take advantage of multiple AMD GPUs, and there are plenty of overclocking features to keep Haswell enthusiasts happy. ■

BY NATHAN LAKE

C7Z87-OCE

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Benchmark Results	Supermicro C7Z87-OCE
3DMark Fire Strike Extreme	2986
Graphics Score	3077
Physics Score	10295
Combined Test	6.08
PCMark 8	
Creative Score	5021
SiSoftware Sandra 2013 SP2 Lite	
Dhrystone AVX2 (GIPS)	130
Whetstone iSSE3 (GFLOPS)	95.62
x32 Multi-Media Integer AVX2 (Mpixels/s)	403.24
x16 Multi-Media Float FMA3 (Mpixels/s)	374.6
Integer B/F AVX/128 (GBps)	16
Floating B/F AVX/128 (GBps)	16
POV-Ray 3.7 Beta	1535.5 pixels per second
Cinebench 11.5	8.07 points
Games (2,560 x 1,600)	
Metro: Last Light (4XAA, 16XAF)	26.89fps
Aliens vs. Predator (4XAA, 16XAF)	31.2fps

Specs: Form Factor: ATX; Max memory: 32GB (DDR3-1600/Max OC: DDR3-3000); Slots: 3 PCI-E 3.0 x16, 3 PCI-E x4 (all run at x1 speed); Storage; 8 6Gbps SATA; Rear I/O: 1 HDMI, 1 DVI; 1 Thunderbolt (10Gbps), 4 USB 3.0, 2 Ethernet, 2 USB 2.0, 1 S/PDIF out, audio I/O; Warranty: 3 years

Test system specs: Processor: Intel Core i7-4770K; GPU: GIGABYTE GV-N750OC-4GB; RAM: 8GB ADATA XPG V2 DDR3-2400; Storage: 128GB Crucial RealSSD C300; OS: Windows 8 Enterprise (64-bit)