



HOW TO
CONFIGURE
YOUR

Manufacturing & Product Design Laptop



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Long before work-from-home, many engineers and other manufacturing professionals were already part of the remote workforce. In fact, the industry often requires work outside of the office—from travel, delivering presentations, and working with customers onsite, to logging on in the evening or weekends in order to meet critical deadlines.

When you're in the office, nothing beats a professional grade workstation purpose-built for engineering and product design applications. But what's the best solution when you have to hit the road, the air, the customer site, or the client's boardroom? Mobility demands a laptop, but if you're considering a model from the one-size-fits-all, commodity manufacturers, how much of an asset is it (outside of emails and internet searches, of course)? If you're trying to run SOLIDWORKS, Inventor, CATIA, Pro-E or other professional CAD applications, the answer is, "not much," unless you opt for a mobile workstation laptop and get serious about its configuration.



Core Essentials

Let's start with processor cores. CAD applications like SOLIDWORKS are "frequency bound," meaning they derive the best performance from fewer, faster cores (rather than a higher number of cores at a lower frequency (GHz). Since the frequency or "speed" determines performance more than any other variable, a laptop with six to eight cores (but higher frequency thanks to Intel® Turbo Boost Technology) is ideal for a multitasker. Windows reliably moves tasks to "free" cores, so that an intensive application like SOLIDWORKS receives 100% of the performance from the cores it's using because they are not burdened with other tasks. The latest Intel Core i7 and i9 laptop processors offer 14 cores.

Regarding RAM

As for system memory, the short of it is, you need enough RAM so that you don't have to swap or borrow from the hard drive. You should begin with at least 32GB, but also consider how many applications you have open at once and if you run simulations and CFD. In those instances, you may need to increase your RAM to 64GB.

Getting Graphic

As for graphics cards, if you're looking for ultimate performance in a complex production pipeline, move to a higher performance GPU like the NVIDIA® RTX™ line. From pans, rotations, and zooms, to the changing of display styles, the NVIDIA RTX A3000 or A5500 performs significantly faster than previous gen NVIDIA GPUs.

SSDs

The last important piece to the laptop configuration puzzle is your hard drive. Choose a solid state drive (SSD). From faster boot up and loading, to the highest level of durability in order to minimize risk to your critical data and time-sensitive projects, SSD is the answer.

3D CAD On-the-Go

Mark Tingley of Accelerated Machine Design & Engineering (AMD&E), an engineering firm that serves aerospace, automotive, oil & gas, energy, pharmaceutical, bio chemistry, bio technology, automation, and other general industrial markets, says his team's projects require multiple tools and software packages, so AMD&E engineers must be experts in analysis, simulation, good design practices, materials, and manufacturing practices. "This means we have to have best-in-class engineering tools and hardware that will perform at a level that keeps things moving," says Tingley. AMD&E was looking for solutions that would provide the necessary performance with the mobility to work where their clients were located (or where the challenges arose). After evaluating multiple laptops, they chose ultra-thin GoBOXX SLM mobile workstation laptops from BOXX Technologies.

The firm transitioned to BOXX APEXX desktop workstations as well. "We love the APEXX workstations," says Tingley. "They handle our large assemblies, simulation, FDA, and animations, but we also need that same solution in a mobile package. We do a lot of work onsite at customer facilities. We work at our vendor facilities or sometimes we'll even go to a local brew pub and have a creative session. Regardless of location, we need that level of horsepower in a laptop. Prior to that, we weren't really able to do thorough design reviews— especially for analysis and simulation of large assemblies. With GoBOXX, we're able to take that right to our customer and have a good, thorough design review within a collaborative environment."