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HP Smart Buys

HP EliteBook 8740w Mobile Workstation with $668 Instant savings until 9/30/10!
The powerful HP EliteBook 8740w Mobile Workstation with ISV certifications handles demanding applications and graphics with ease. Get precise color control on the 17-inch diagonal display with advanced features, including optional HP DreamColor.

HP LD4200tm 42-inch Widescreen LCD Interactive Digital Signage Display
Tap into the future with the HP LD4200tm 42-inch Widescreen LCD Interactive Digital Signage Display, featuring infrared technology, for on-screen interaction in environments such as point-of-sale (POS), hospitality, education, banking, and kiosks.

HP EliteBook 8740w Mobile Workstation

Mobile workstation provides the power, graphics, and storage necessary for CAD applications.

By Robert Green, *Cadalyst* Contributing Expert

Let's say you've just received the news that you're heading out for a weeklong assignment at a job site. Do you dread this scenario because you'll be lugging a low-end notebook that you know will slow your CAD productivity? Do you wish you had the kind of computing resources on the road that you have in your desktop workstation? Mobile workstations such as the HP EliteBook 8740w can fulfill your wishes and needs by providing the power you need with a big 17" diagonal screen and a lightweight 7.8-pound package that definitely fits under the airline seat in front of you. Interested?

When Notebooks or Portables Aren't Enough

With all the recent fuss about the iPad and ultralight portable machines, it is easy to gloss over the fact that these machines lack the power, graphics, and storage capacity required to run high-power CAD applications. CAD requires multiple-processor cores with lots of memory, fast hard disks, and graphics resolutions and speeds that simply aren't available in the common lower-end mobile computers.

Defining how a mobile workstation differs from a notebook requires a thorough understanding of what's under the hood. For the purposes of illustrating the difference, I'll discuss the specifications of the HP EliteBook 8740w and contrast it with a more conventional notebook computer.

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Certification

The HP Z200 Workstation is the only workstation with the official AutoCAD certification label. Note -- all HP Z workstations and EliteBook Mobile Workstations have been certified with AutoCAD.

Certified for AutoCAD Autodesk

Certified* for use with AutoCAD 2011 only, with certified graphics card installed. See http://usa.autodesk.com/ACAD2011Graphics for a complete list.

With traditional notebook styling, the HP EliteBook 8740w travels as any other notebook would but performs like a workstation.

Processor and Memory

The performance of any computer is determined by the processor, memory, and chipset architecture around which it is designed. To that end, the HP EliteBook 8740w uses the Mobile Intel QM57 Express chipset with an Intel Core i5-520M or i5-540M (dual core clocking in at 2.40 and 2.53 GHz respectively with 3 MB of SmartCache), an Intel Core i7-620M (dual core with 4 MB SmartCache at 2.66 GHz) or an Intel Core i7-720QM or i7-820QM (quad core with 6 MB and 8 MB SmartCache at 1.60 and 1.73 GHz, respectively) (1). The Mobile Intel QM57 Express chipset allows as many as 16 GB of RAM (1,333-MHz DDR3 SDRAM) for i7 quad-core-equipped models and 8 GB for i5/i7 dual-core models. (Of course, memory amounts greater than 4 GB can be used only with 64-bit operating systems such as Windows 7 64-bit or Windows XP 64-bit or Linux.)

Intel's Core i7-720QM and i7-820QM chips provide quad-core power and 16-GB RAM capabilities for mobile workstations.

Hard Disks

Because 3D CAD and rendering files can be so large, workstations often exceed the available RAM and begin using hard-drive resources to support computing tasks. When this excessive disk access occurs, your computer's processor is only as good as the computer's on-board hard-disk system.

Most consumer notebooks use 5,400- or even 4,200-rpm disk drives that have far less

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data throughput than the HP EliteBook 8740w's 7,200-rpm disk systems.

Unlike consumer notebooks, the HP EliteBook 8740w offers high-end disk options such as a 256-GB (2) solid state hard drive (no moving parts, just memory) for higher speed and immunity to mechanical jarring and dual-drive RAID 0 (data striping) or RAID 1 (data mirroring) through the drive expansion bay.

Security and Durability

Of course no matter how fast your hard drive is, it won't matter if your data is wiped out because you dropped your computer. And it definitely won't matter how great your mobile workstation is if it is ever stolen and your personal data is accessed by someone else.

To deal with these types of concerns, the 8740w is equipped with several security enhancing features, including the following:

- HP 3D DriveGuard uses a three-axis digital accelerometer to automatically park the hard-drive heads when it senses adverse motion conditions. In addition, the 8740w undergoes a rigorous Mil Spec 810G testing regimen for thermal and humid environments as well as mechanically challenging ones (3).
- New self-encrypting digital (SED) drives (availability slated for July) use the new Trusted Computer Group's (TCG) Opal industry standard to prevent unauthorized access to drive information should the drive be removed from the computer by industrial hackers.
- A biometric fingerprint sensor prevents unauthorized access.

Workstations equipped with HP 3D DriveGuard have a hard-disk status light that indicates when your hard drive is parked, so you can move your workstation without worrying about data loss.

Graphics System

CAD is a visual design experience, so obviously seeing what you're working on is of great importance. If you've ever struggled trying to perform complex CAD design work on a 1,024 x 768 resolution small notebook screen, you've experienced firsthand the limitation of low-resolution notebooks.

The HP EliteBook 8740w has a 17" diagonal, wide-format, backlit LCD screen capable of WUXGA resolutions (1,920 x 1,200 or full 1080p HD [4]), which are ideal for high-end CAD or HD presentations. An optional HP DreamColor panel enables 30-bit color

accuracy (topping 1 billion color combinations) and interaction with other HP DreamColor-equipped peripherals for accurate color printing and plotting (5).

For users who give presentations, the ability to drive HD monitors with the included display port or a data projector with the VGA (15-pin female connector) output completes the graphics tool kit. With optional docking stations, the ATI graphics adapter's Eyefinity feature can be used to support as many as five displays (5).

Mobile Connectivity

All this mobile power won't do you much good if you can't connect to the Internet wherever you may be, right? To that end, the HP EliteBook 8740w provides an integrated Intel Gigabit network adapter for plugged-in communications as well as an Intel Centrino 802.11 a/b/g/n-compliant wireless network adapter (6). And for those who travel to far-flung job sites, an optional HP Mobile Broadband GPS-enabled adapter compatible with AT&T, Sprint, or Verizon mobile networks completes the HP EliteBook 8740w's connectivity feature set (7).

The HP EliteBook 8740w also supports Bluetooth 2.1 for integrating wireless peripherals such as headsets or synching a smartphone (5).

Mobile Collaboration via SkyRoom

Like all HP workstations, the HP EliteBook 8740w ships with HP SkyRoom audio and video collaboration software preinstalled. HP SkyRoom uses remote graphics technology to achieve smooth, jerk-free video; better-than-telephone quality audio; and desktop sharing at resolutions as high as 2,560 x 1,600 with 28-frame per second video performance for as many as four concurrent users -- all without any monthly fees!

HP SkyRoom provides high-quality sound, video, and desktop-sharing tools for as many as four users without any subscription fees.

Configuration Management with Performance Advisor

The HP EliteBook 8740w is equipped with HP Performance Advisor, a configuration-management software tool that tracks CAD application drivers and installs them when greater performance may be obtained.

If you've ever wished you could find the latest certified drivers for a notebook before, then Performance Advisor is the application you've always wished for. In fact,

Performance Advisor helps the HP EliteBook 8740w achieve its ISV certifications by assuring that your graphics drivers are always the latest certified for your installed CAD applications.

HP Performance Advisor keeps track of device and driver configurations so you don't have to.

Cost-Justifying Mobility

With mobile workstations being more expensive than consumer notebooks, the question of justifying that cost is going to arise. As with any cost justification, the mobile workstation will have to deliver enough extra performance to justify its higher price. Here are a few possibilities to consider:

Desktop workstation replacement. If a high-powered mobile workstation can be used exclusively (instead of in addition to a desktop workstation), the savings from eliminating the desktop machine will help offset the mobile workstation cost. For example, a savings of $1,500 on a desktop machine could be used as a base number.

Customer responsiveness. If a traveling applications engineer can perform high-end CAD functions at a client site rather than having to wait for support from the main office, what is that responsiveness worth? Could you close more sales by providing detailed renderings or analysis results while at a client's facility?

Workforce flexibility. What is it worth to have members of your workforce able to work at a remote office with complete computing productivity and without having to provide visitor workstations and IT infrastructure?

These questions are interesting -- and only you can answer them. But if you can save more than $1,000 by reducing the number of desktop stations your IT department purchases and manages while increasing customer satisfaction, then you can make a solid case for investing in mobile workstations, right?

Wrapping Up

During the past decade, we've seen notebook computers go from being big, heavy, low-power monsters to sleek, lightweight machines that are highly mobile but still lack computing power. Mobile workstations such as the HP EliteBook 8740w are making no-sacrifice CAD computing power available to road warriors everywhere.

Although mobile workstations cost more than consumer notebooks, the time savings gained from the computational speed, data security, and ISV-certified CAD graphics performance for CAD applications justifies those costs. If supporting mobile CAD users is part of your computing strategy, you should add an analysis of how mobile

workstations could benefit your users' to-do lists.

About the Author

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Robert provides CAD implementation, consulting, and programming services for a variety of companies throughout the United States and Canada. He holds a degree in mechanical engineering from the Georgia Institute of Technology and is the author of *Expert CAD Management: The Complete Guide*. Reach him via his web site at www.cad-manager.com.

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This system may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See http://www.microsoft.com/windows/windows-7/ for details.

(1) 64-bit computing on Intel architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your HW and SW configurations. See www.intel.com/info/em64t. Dual-, Quad-, and Triple-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Intel's numbering is not a measurement of higher performance.

(2) For hard drives, GB = 1 billion bytes and TB = 1 trillion bytes. Actual formatted capacity is less. As much as 16 GB of system disk is reserved for system recovery software.

(3) Testing was not intended to demonstrate fitness for Department of Defense contracts requirements or for military use. Test results are not a guarantee of future performance under these test conditions.

(4) HD content required to view HD images.

(5) Sold separately or as an optional feature.

(6) Wireless access point and Internet service is required and is not included. Availability of public wireless access points limited.

(7) Broadband requires separately purchased wireless service contract. Check with provider for availability and coverage in your area.

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