HP Mobile Workstations with NVIDIA® Graphics

Computer-aided Design & Drafting On-the-go with HP Mobile Workstations

Get unbeatable performance in a to-go package

HP understands that workstation users need the ultimate in computing performance, outstanding visuals, speed, and reliability to run the most demanding professional applications. Understanding and exceeding these requirements has been an ongoing focus of the HP Workstation line. Now this unbeatable performance is available in a to-go package—powerful mobile solutions that allow you to take your workstations wherever you need to go.

HP EliteBook Mobile Workstations offer maximum quality and reliability with our business-rugged design and extensive testing. And our wide range of ISV-certified graphics solutions for workstations includes the NVIDIA® Quadro® Mobile workstation product family.

NVIDIA® Quadro® Mobile graphics processing units (GPUs) provide performance and quality to meet the needs of the most demanding professionals. Digital content creators on a movie set, engineers at the plant, and geo-scientist on a remote oil rig can maximize onscreen performance for professional 3D applications with industry-leading professional graphics from NVIDIA®, featuring up to 4GB of video memory.

Power to perform

HP Mobile Workstations are a powerful solution when you require the competency of a desk-side system combined with the convenience of a notebook:

- Go mobile without sacrificing performance. With the 2nd Generation Intel® Core™ i7[4] dual-core and quad-core processors, and i5[4] dual-core processors, gain the power to quickly edit, transfer, and share content, while staying untethered and energy efficient.

- Increase productivity, stability, and performance with ISV-certified professional applications and graphics. HP Mobile Workstations receive the same extensive ISV testing performed on desk-side workstations.

- Easily tune your HP EliteBook Mobile Workstation configuration and applications with HP Performance Advisor for enhanced performance and stability.

- Run demanding applications smoothly and fast with the power of NVIDIA® Quadro® graphics designed specifically for mobile workstations.

- Get groundbreaking color accuracy in a mobile form factor with HP DreamColor display technology[5] (select models).

- Enjoy superior quality, a business-rugged[1] design that withstands the rigors of mobile use, and features such as HP ProtectTools[6] to enhance security and data protection.

GO MOBILE WITH CONFIDENCE

Taking your workstation applications on the go can be a challenge, with the need for:

- Fast processing speed in a portable, lightweight package for analysis and design work.
- Genuine Windows® 7 Professional
- ISV certified applications and graphics for highly reliable performance.
- Workstation class graphics cards for high end visualization.
- Superior display resolution and color accuracy.
- Durability and security for mobile computing.
- Up to 32GB of memory[2] support and 1.5TB of internal storage[3].

Key features of NVIDIA® Quadro® Mobile Workstation graphics

Feature	Description	Benefit
Next-Generation NVIDIA® CUDA® Architecture	Parallel computing architecture that enhances performance by harnessing the power of the graphics processing unit (GPU)	Combines high-performance graphics and high-performance computation, allowing professionals to solve highly complex challenges such as real-time ray tracing, video encoding, and interactive rendering.
OpenGL and DirectX support	Professional application technologies	Provides a high degree of reliability, faster transfer, and faster manipulation of 3D textures. Together, NVIDIA® and HP offer full OpenGL and DirectX 11 support for the EliteBook w-series, which are ISV certified.
30-bit color fidelity	Color accuracy and quality	Enables over a billion color possibilities for rich, vivid image quality with the broadest dynamic range.
NVIDIA® Optimus™ technology	Battery life and performance management	Automatically optimizes performance to extend battery life and amazing visuals.

Workstation power in a mobile solution

The HP EliteBook w-series Mobile Workstations offer the performance, professional graphics, display technologies, and ISV testing of a desk-side workstation—with the advantage of mobility. With HP Mobile Workstations, you can supplement your desk-side workstation solution, or even put it aside, with the confidence that you have the power to run your applications anywhere you go. And all HP Workstations, including the EliteBook Mobile Workstations, come with a standard three-year limited warranty.

▸ **Performance.** HP EliteBook w-series Mobile Workstations offer a range of options from the new 2nd Generation Intel® Core™ i7[4] and i5[4] processor families with Intel® Turbo Boost technology[7]. Featuring dual-core and quad-core Intel processors, up to 32GB of memory[2], and 64-bit processing, the HP EliteBook Mobile Workstations can meet the needs of demanding applications.

Just like on our desk-side workstations, the HP Performance Advisor software automatically tunes HP EliteBook Mobile Workstations, finding and installing the proper drivers and configuring the system to optimal settings based on your workflow. This type of tuning can result in significantly improved performance along with system and software stability that can add up to an improved return on investment.

▸ **Display technology.** HP EliteBook Mobile Workstations offer a range of LED-backlit display sizes and technologies to meet the demands of professional applications and mobile use. They also include DisplayPort connectivity for sharper, deeper images on external displays.

OUTSTANDING PERFORMANCE WITH NVIDIA® QUADRO® GRAPHICS

HP EliteBook Mobile Workstations with NVIDIA® Quadro® graphics offer outstanding performance, certified for the most demanding applications. NVIDIA® professional graphics solutions provide advanced levels of visualization and compute power for rendering and manipulation.

Available as an option, the HP DreamColor[5] display enables professionals to work with deep, accurate colors for precise results. Able to display 1 billion color possibilities—64 times the capabilities of a traditional display—today's HP EliteBook Mobile Workstations provide accurate color control.

▸ **ISV certification**. Whether using our mobile or desk-side workstations, you benefit from HP's long-term relationships with independent software vendors, including extensive testing and integration of third-party applications. The ISV program ensures a high degree of hardware and software compatibility, providing stability and enhanced performance for increased productivity.

Durability and reliability for professionals on the go

HP EliteBook Mobile Workstations are designed, tested, and inspected for professional quality and durability. And NVIDIA® Quadro® graphics solutions are designed, tested, and built by NVIDIA® to meet ultra-high standards of quality assurance.

Every HP EliteBook Workstation is subjected to the HP Total Test Process (TTP)—100,000 hours of rigorous testing that helps ensure superior quality and reliability in a wide range of applications and operating environments. HP EliteBook Mobile Workstations also meet military standards testing (MIL-STD 810G)[1] for dust, altitude, and temperature. They are tested at extreme temperatures above 60°C/140°F and below –29°C/–20°F, for bumps, and vibrations, helping to ensure reliability through the rigors of everyday use.
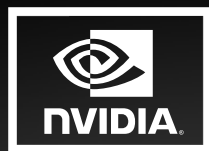
In addition, HP EliteBook Mobile Workstations feature a business-rugged[1] design including:

HP 3D DriveGuard[8]**.** Helps protect the hard drive against impact, bumps, or drops. Critical information is easily protected while on the move. The HP 3D DriveGuard[8] relies on a three-axis digital accelerometer that acts as a motion sensor, notifying the system software of any sudden movement and temporarily parking the hard drive.

Spill-resistant keyboard with drains. Helps protect sensitive electronics and key components from minor spills that might otherwise cause system failure. An innovative drainage system funnels fluid out through the bottom of the notebook.

HP Mobile Workstation solutions with NVIDIA® graphics

Choose from two models and display sizes, with a variety of NVIDIA® graphics options. All HP EliteBook Mobile Workstations have the power, performance, and mobility you expect from HP, but some key differences can help determine the best fit.

Model	Key Specifications	Description	Designed For	NVIDIA® Graphics Options	NVIDIA® Graphics Description
HP EliteBook 8560w	15.6-inch diagonal display Genuine Windows® 7 Professional Up to 32GB system memory[2] Starting at 6.69 lbs/3.0 kg[16] (2) USB 2.0, and (1) eSATA/USB 2.0 combo ports[15] DreamColor display option[5] Integrated numeric keypad	HP's most versatile Portable powerhouse Maximizes productivity	Developers, engineers, architects, designers, video editors, and 3D animators who need intense workstation graphics, plus ISV certifications and a large display that won't weigh them down.	NVIDIA® Quadro® FX 1000M with 2GB DDR3 video memory *(Mid level)* NVIDIA® Quadro® FX 2000M with 2GB DDR3 video memory *(Mid level)*	Get superb performance and value from 15.6-inch diagonal mobile workstations. Delivers a power efficient, rich experience for cost-conscious professionals. Experience phenomenal graphics performance on 15.6-inch diagonal mobile workstations. Delivers a power-efficient, phenomenal visual experience for users on the go.
HP EliteBook 8760w	17.3-inch diagonal display Genuine Windows® 7 Professional Up to 32GB system memory[2] Starting at 7.55 lbs/3.4 kg[16] (2) USB 2.0, and (1) eSATA/USB 2.0 ports[15] DreamColor display option[5] Integrated numeric keypad, optional backlit keyboard	HP's most powerful Maximum performance Handles demanding applications and graphics with ease	Digital content and design professionals such as 3D animators, designers, architects, and video editors, who need advanced workstation graphics with ISV certifications.	NVIDIA® Quadro® FX 3000M with 2GB GDDR5 video memory *(High end* NVIDIA® Quadro® FX 4000M with 2GB GDDR5 video memory *(High end)* NVIDIA® Quadro® 5010M with 4 GB GDDR5 video memory *(Ultra-high end)*	Get unrivaled performance and value from mobile workstations. Delivers a power efficient, full-featured, high-performance experience. Get ultimate professional graphics for 17-inch diagonal mobile workstations. Provides a full-featured, ultimate performance experience for users on the go. For high-precision, data-sensitive applications, the Quadro® 5010M mobile graphics solution has ECC memory and fast 64-bit floating point precision to ensure the accuracy and fidelity of results. It also has a Parallel Datacache™ and dual copy engines for exceptional throughput, and other high-end features.

HP DuraCase[9]. The HP DuraCase[9] is an incredibly strong, hybrid magnesium-aluminum chassis designed to withstand an enormous amount of physical impact and pressure common in business and enterprise environments. Inspired by aerospace materials and construction for their superior strength-to-weight properties, the new HP DuraCase[9] deploys a higher level of scrutiny in precision and quality, yielding a significantly more rigid and robust chassis than previous generations. This obsession in engineering translates to unparalleled protection against damage and lower total cost of ownership for our customers.

HP DuraFinish[10]. Protects the notebook's palm rest, display cover, and touchpad from normal wear and tear with scratch-resistant material so it looks newer, longer.

Manufacturing quality assurance inspections. Ensures precise fit and finish to meet HP EliteBook quality standards. All HP EliteBooks undergo inspection before shipping to customers. Hinges, keyboard, touchpad, seams, and even docking hooks are examined with precision gauges to ensure all meet exacting standards before they leave the manufacturing floor.

Ideal for the demands of mobile workstation computing

The combination of HP Notebook Innovations and NVIDIA® graphics make HP EliteBook Mobile Workstations perfect for professionals' most exacting computing needs. You can take your highly tuned graphics workstations with you wherever you go—knowing you have a mobile workstation that can handle the demands of applications and the demands of mobile computing.

Security and mobile convenience. HP ProtectTools[6] offers a portfolio of security technologies and features built into hardware, firmware, and software that work together to address critical aspects of information security. HP QuickWeb[11] lets you tap into fast, convenient and more secure access to the Internet, email, contacts and calendar at the touch of a button without long boot-up times. Personalize your view by picking from a selection of built-in applets such as social media, news and other commonly-used utilities. HP QuickWeb[11] also delivers strong security for business needs via email encryption and enhances user authentication with support for passwords and biometrics.

With integrated HP Mobile Broadband[12] featuring 3G and 4G from leading technology providers like Qualcomm and Ericsson, you can conveniently access the internet, corporate networks, email, and mission-critical information in more places around the world[13].

Battery life. HP Power Assistant[14] extends battery run time while reducing energy consumption through a simple interface. It is an integrated solution that measures and logs reported energy usage. You can even create custom power plans to meet specific computing needs around the clock. In addition, IT administrators can centrally manage power consumption and reporting for their entire installed base (time, watts, energy cost, and carbon footprint) with support for select HP business notebooks, desktops, workstations, and display models.

Desk-side integration. HP Mobile Workstations also integrate seamlessly with a desk-side setup through full-size numeric keypads (select models), docking capabilities, and HP mobile accessories. Advanced eSATA ports allow for external storage devices, and you can benefit from the speed of USB 2.0 ports[15].

Groundbreaking color accuracy

With our HP DreamColor[5] technology, HP Mobile Workstations provide groundbreaking color accuracy in a mobile form factor. The 30-bit RGB backlit display supports over one billion color possibilities for precise results every time. Superior IPS panel technology provides significantly less color shift than TN panels at different viewing angles and a 178-degree typical viewing angle. The HP DreamColor[5] engine enhances colorspace remapping and gamma control, and the factory color calibration process gives you out-of-the-box color accuracy.

HP DreamColor[5] technologies improve color matching from vision to production so you easily get accurate, consistent color across a variety of devices including display and printer. HP DreamColor[5] is done automatically, so you are free to focus on the end-result instead of the process. And you can lower production costs and reduce wasted supplies and time. HP DreamColor[5] displays are ideal for color-critical applications such as animation, game development, graphic arts, commercial printing, film/video post-production, MCAD, and product design.

Discover powerful HP Mobile Workstation solutions

Call 1.866.625.0242 or go to **www.hp.com/go/mobileworkstations**

1. MIL STD 810G testing was not intended to demonstrate fitness for U.S. Department of Defense contracts or for military use. Test results are not a guarantee of future performance under these test conditions.
2. Maximum memory capacities require Windows® 64 bit operating systems or Linux. With Windows® 32 bit operating systems, memory above 3GB may not all be available due to system resource requirements.
3. For hard drives, 1GB = 1 billion bytes, 1TB = a trillion bytes. Actual formatted capacity is less. Up to 16GB of disk space is reserved for system recovery software.
4. Dual/Quad Core is a new technology designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 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 hardware and software configurations. Intel s numbering is not a measurement of higher performance.
5. Sold separately or as an optional feature. HP EliteBook 8740w mobile workstations with HP DreamColor technologies are not available with HP Mobile Broadband.
6. HP ProtectTools functionality requires Microsoft® Windows®.
7. Intel® Turbo Boost technology requires a PC with a processor with Intel Turbo Boost capability. Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See www.intel.com/technology/turboboost for more information.
8. Microsoft® Windows® required.
9. The tablet model does not feature HP DuraCase.
10. Touchpad protection available only in the Professional and Workstation series models only.
11. HP QuickWeb is accessible when the notebook is off in Windows® based systems. Internet access is required. Timing may vary depending on the system configuration. To enable the feature following the removal of the battery, reboot the notebook prior to subsequent use.
12. 4G compatibility with HSPA+ and Wimax.
13. Wireless use requires separately purchased service contract. Check with your local vendor for coverage area and availability in your area. Connection and speeds will vary due to location, environment, network conditions, and other factors.
14. Power calculations and cost calculations are estimates. Results will vary based on variables, which include information provided by the user, time PC is in different power states (on, standby, hibernate, off), time PC is on battery or AC, hardware configuration, variable electricity rates and utilities provider. HP advises customers to use information reported by HP Power Assistant for reference only and to validate impact in their environment. Environmental calculations were based on U.S. EPA eGrid 2007 data found at www.epa.gov/egrid/. Regional results will vary. Microsoft Windows required.
15. USB and eSATAp cables sold separately.
16. Weight will vary by configuration.