

Dell's Precision M6600 Mobile Workstation Leads the Way

by Alex Herrera

This newsletter reflects industry analyst Alex Herrera's views and does not necessarily reflect the opinions, product plans, or strategies of Dell or Intel.

With core component technology supplied by a select few premier silicon providers, the workstation could mistakenly be taken for a commodity product. Yes, thanks to the incredible performance, quality, and pace of innovation coming from vendors such as Intel[®], OEMs like Dell share technology with other workstation manufacturers. But while there are compelling and obvious benefits to the industry's open and horizontal model — most notably unbeatable price per performance — to assume every workstation vendor's wares are the same would be far off the mark.



(Source: Dell)

Figure 1. The Precision M6600: Dell's latest high-end mobile workstation, based on the 2nd Generation Intel® Core™ processor.

Let's start with the foundation. The Dell Precision M6600 mobile workstation starts at \$1,649 with a weight of 7.8 lb (3.5kg), offering a 17.3" Full-HD LED-backlit display and an optional second storage drive. From there, buyers can configure options in processor, professional graphics, display, and storage, several of which are unique in the industry and allow demanding professionals to custom-build a machine that is anything but commodity.

Dell's Precision M6600 Cuts No Corners

No compromises. It's the goal Dell set as its design criteria for the Precision M6600, and it's an edict that can be seen in all of the system's key architectural components. Leveraging an innovative CPU microarchitecture and an industry-leading 32 nm silicon manufacturing process, Intel delivered the industry's most compelling package of price and performance. A close partner of Intel, Dell not only provides the most comprehensive processor line up for the M6600, it is the only company in the industry to go the extra mile and offer the most powerful model available, bar none: the 2.7 GHz Intel® Core™ i7-2960XM Extreme processor.

Dell's mission to be the highest performing mobile workstation on the planet can't afford to skimp on graphics. Accordingly, the M6600 comes configured with one of several select GPUs, from price/performance leaders such as AMD's FirePro Mobility 8900 and Nvidia's Quadro 3000M or 4000M (each paired with 2 GB memory), to the no-holds-barred Quadro 5010M (4 GB), the fastest mobile workstation graphics engine.

And, don't forget that the M6600's Intel® Core™ processors come with its own performance-oriented graphics engines (Intel® HD 3000 Graphics), which don't go to waste. Because, while professionals certainly demand hard-core rendering, there are also times they're reading e-mail, browsing the web, or kicking back on a plane to watch a movie or two. And, for those times, there's no point chewing up the extra wattage to power the discrete GPU, when the very capable integrated GPU can more than handle the job. Equipped with Intel QuickSync technology, the Intel® Core™ i7's GPU is unbeatable in performance per watt, especially when it comes to video. With Nvidia's Optimus technology, each of the M6600's GPUs is called on for the tasks it handles best, minimizing energy use and maximizing battery life.

The Most Versatile Mobile Workstation Display in the Industry

Paired with the M6600's all-purpose graphics subsystem is a 17.3" LED-backlit screen, offering up to Full-HD resolution (1920 x 1080). And, keeping with that no-compromise theme, Dell provides the option of Full-HD in an in-plane switching (IPS) panel, which provides a viewing angle that no conventional TN/STN LCD can match. Workstation professionals today rely on multi-display environments, and the M6600 complies with up to five simultaneous displays.

Choose the Full-HD screen, and buyers are presented with a truly unique option, one we expect other vendors to copy, but for now remains a Dell exclusive: Touch. When would

we prefer to use fingers (or stylus) on the screen over grabbing a mouse to perform the same function? The answer's simple: when it's faster to do so, more intuitive to do so, or both. Supporting both a stylus and four-finger multi-touch, the M6600's touch capability not only opens up the possibility of special creative effects with applications such as Adobe Illustrator, it means a faster, more intuitive interface to speed common UI operations like opening, closing, and moving windows. Whether engaged in mechanical engineering or studio content creation, designers can annotate or draw directly on the screen.

Touch is a compelling add-on today, but may shortly become a must-have for many, thanks to the impending launch of Microsoft Windows 8, which will offer tablet/phone-like multi-finger touch. With its four-finger support, the M6600's touchscreen presents an even richer palette of gestures with the potential to ease and speed the way you interact with your machine and manipulate your design, visualizations, and analysis results. Forget reaching for the mouse to grab a scroll or zoom bar. Instead, you'll be able to navigate large, complex product drawings with ease. Flick a finger to pan, pinch two to zoom, or twist four to rotate.

Raising the Bar: 1 TB of SSD Storage

Solid-State Device (SSD) bulk storage has been catching on in all areas of computing, and for good reason. By leveraging flash, SSD drives can dramatically reduce the latency in accessing storage, thereby improving performance, especially for applications that do frequent and/or random accesses.

Historical stumbling blocks to widespread SSD acceptance have been two-fold: SSDs have been prohibitively expensive and offered capacities too small for most workstation users to rely exclusively on. But the M6600 is breaking through such limitations, especially when it comes to capacity.

While SSDs are unlikely to ever reach parity in dollars per GB, prices have come down enough that many buyers can consider populating one SSD, if not two. And, while other workstation suppliers still require compromises by those hungry for both capacity and performance, Dell does not. The dual-bay M6600 supports 512 GB SATA3 Mobility SSDs, providing up to 1.6 TB of SSD storage — a first in the mobile workstation arena. To achieve 1.6 TB, you can configure two 750 GB spinning drives and a 128 GB mini card. Using the HDD space to configure SSD can allow for a total capacity of 1 TB; 1.28 TB if you configure with a 128 GB mini card plus the two 512 GBs.

Because no respectable workstation (mobile or not) should skimp on RAID, the M6600 allows its dual bays to be configured in RAID 0 mode (for maximum read performance), RAID 1 (for high reliability), and RAID 5 (for a combination of both). Mobile workstations tend to leave the office with more high-value content and IP than any other machines, and Dell's storage self-encryption option offers a natural and compelling complement to RAID reliability.

No compromises. Too often, it's just marketing-speak vendors used to hype what's offered. But in Dell's case, it's reality, and the Precision M6600 mobile workstation has

the specs to back up the claim. Any system's performance is only going to be as good as its weakest link. But in the case of the M6600, there is no weak link, as the options for carefully selected CPU, GPU, storage, and display technology deliver not only best possible system performance, they're exceptionally well-balanced as well. Simply put, in today's mobile workstation landscape, the M6600 has no peer.

For the latest look at all of Dell's mobile and deskside workstations, visit www.dell.com/smb/workstations.