Datasheet

HyperX OMEN MAX 16 inch Gaming Laptop PC 16-ah1402na

Claim the power. Own the speed.

The HyperX OMEN MAX 16 gaming laptop provides unparalleled performance both at-home or on-the-go. With NVIDIA® GeForce RTX™ 50 Series GPUs and Intel® Core™ Ultra CPUs[1], a new Unleashed Mode for manual overclocking, and and a thermal architecture built to cut down on both throttling and long term wear, dedicated gamers can achieve their best for years to come.

*Product image may differ from actual product

Performance you control

Throttle less and carry more with the latest Intel® Core™ Ultra CPUs[1] and NVIDIA® GeForce RTX™ 50 Series GPUs.

Put your throttling on ice

Self-cleaning fans, a vapor chamber, and liquid metal ensure your laptop stays cool and reduces maintenance.

Claim the competitive advantage

Get a device that moves at the speed of your reactions with our new HyperAction 1000Hz polling rate keyboard.

Sustainability in action

We're in this together

Build the future you play in.

with

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Featuring

Get a fresh perspective
From a rejuvenated Start menu, to new ways to connect to your favorite people, news, games, and content—Windows 11 is the place to think, express, and create in a natural way.[2]

Game Changer
Powered by NVIDIA Blackwell, GeForce RTX™ 50 Series Laptop GPUs bring game-changing AI capabilities to gamers and creators.[3]

NVIDIA® G-SYNC™
By synchronizing the refresh rates of your GPU and display, NVIDIA® G-SYNC™ technology delivers gameplay that's sharp, fluid, and stutter-free with minimal input lag.

OLED display
With display technology that lights each pixel separately, you'll get deeper blacks for richer contrast, enhanced color depth, and more power efficiency than traditional LED screens.

Eyesafe® Certified Display
Eyesafe® certified displays meet TÜV low blue light requirements and Eyesafe® standards for protecting your eyes from harmful blue light without distorting colors to reduce eyestrain when working for long periods of time.[4]

0.2 ms response time
How fast your display's pixels respond is crucial for a smooth picture. With a 0.2-millisecond response time, your action-filled content will look crisp and fluid without motion blur.[5]

Flicker-free
Using DC Dimming technology that controls brightness by adjusting direct current rather than cycling the backlight, we can eliminate screen flickering for more comfortable viewing.[6]

16:10 aspect ratio
A 16:10 aspect ratio lets you see more of your content with less scrolling.

100% DCI-P3
With 100% DCI-P3, experience a wider color range and cinema-grade visuals —richer reds, deeper greens, and vibrant color that elevates movies, photos, and creative work.[7]

Xbox Game Pass Premium 2-month trial
Enjoy 2 months of Xbox Game Pass Premium. Free with your new HP device. Access a library of legendary, high-quality games, get exclusive in-game perks, partner discounts, and earn points annually with Xbox Rewards.[8]

Keyboard contains post-consumer recycled materials
We're bringing a more thoughtful design to our keyboards by using post-consumer recycled materials in the design.[9]

Effortlessly connected
Enjoy a smoother wireless experience with a Wi-Fi 7 and Bluetooth® 6.0 combo.[10]

Thunderbolt™ 4 with USB Type-C®
The latest Thunderbolt™ solution lets you power your device or connect up to two 4K displays with a single cable and blazing 40Gbps signaling rate.

DisplayPort™
This robust digital video and audio port transmits up to 8K performance or allows you to connect multiple displays together.[11]

DDR5 RAM
Designed to run efficiently and reliably at faster speeds, DDR5 is the latest RAM standard. With higher bandwidth, you get more of a boost in performance.

Up to 1 TB PCIe® Gen5 NVMe™ Value M.2 SSD
With smooth data transfer, the 1 TB PCIe Gen5 NVMe M.2 SSD ensures consistent performance for everyday tasks with ample storage[12]

DTS: X® Ultra Technology
By producing authentic, spatially accurate 3D sound through any headset, this technology offers specially tuned audio modes for different game types to provide immersion for the best entertainment experience possible.[13]

Audio tuned by HyperX
Immerse yourself in the sweet sounds of audio mixed and tuned by HyperX.

Recommended accessories and services (not included)

HyperX QuadCast 2 S - USB Microphone (Black)
9A273AA

HyperX Pulsefire Haste 2 Pro - 4K Wireless Gaming Mouse
A1KY5AA

HyperX Cloud Alpha 2 - Wireless Gaming Headset
AJ5C7AA

3-year pickup and return
UM963E

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Specifications

Performance

Operating system
Windows 11 Home
Processor
Intel® Core™ Ultra 7 270HX Plus (up to 5.3 GHz with Intel® Turbo Boost Technology, 30 MB L3 cache, 20 cores, 20 threads)[6,7]
Processor family: Intel® Core™ Ultra 7 processor
Neural Processing Unit (NPU): Intel® AI Boost (13 NPU TOPS)
Chipset
Intel® HM870
Memory
32 GB DDR5-5600 MT/s (2 x 16 GB)
Transfer rates up to 5600 MT/s.
Number of User-accessible Memory Slots: 2
Storage
1 TB PCIe® Gen5 NVMe™ M.2 SSD
100 GB Dropbox storage for 3 months[1]
Graphics
Discrete: NVIDIA® GeForce RTX™ 5080 Laptop GPU (16 GB GDDR7 dedicated) ; Advanced Optimus
Audio
Dual speakers; HP Audio Boost; HyperX; DTS:X Ultra™
Display
40.6 cm (16") diagonal, 2.5K (2560 x 1600), OLED, up to 240 Hz, 0.2 ms response time, UWVA, micro-edge, BrightView, Low Blue Light, SDR 500 nits, HDR 1100 nits, 100% DCI-P3[17,21,26,28]
Screen-to-body ratio
89%[18]
Power
460 W AC GaN power adapter;
Battery and Power
Supports battery fast charge: approximately 50% in 30 minutes[5]

Connectivity

Network interface
Integrated 10/100/1000/2500 GbE LAN
Wireless connectivity
MediaTek Wi-Fi 7 MT7925 (2x2) and Bluetooth® 6.0 wireless card [12,46]
Ports
2 USB Type-A 10Gbps signaling rate; 1 AC smart pin; 1 HDMI 2.1; 1 headphone/microphone combo; 1 RJ-45; 2 Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery 3.1, DisplayPort™ 2.1, HP Sleep and Charge)[19,42]
Expansion slots
2 M.2 (SSD)

Sustainability

Sustainable impact specifications
Ocean-bound plastic in bezel; Recycled metal in cover, base and hinge cap(s); Keyboard keycaps, scissors and keyboard plate contain post-consumer recycled materials[39,40,41]

Design

Product color
Shadow black aluminum
Sandblasted finish cover and base, matte paint keyboard frame

Software

HP apps
HP Connection Optimizer; OMEN Gaming Hub
Software
Otter.ai;
1 month trial for new Microsoft 365 customers[24]
Service & support
McAfee Online Protection 30-day trial; Xbox Game Pass Premium 2-month trial [2]

Additional information

Part Number
P/N: E41T9EA #ABU
UPC/EAN code: 885981137811
Weight
2.97 kg;
Packed: 5.86 kg
Dimensions
35.65 x 26.9 x 2.61 cm (front); 35.65 x 26.9 x 2.87 cm (rear);
Packed: 10.9 x 42.8 x 33.2 cm
Manufacturer Warranty
1 year (1/1/0) limited warranty includes 1 year of parts and labor. No on-site repair. Terms and conditions vary by country. Certain restrictions and exclusions apply.
Keyboard
Full-size, per key RGB backlit, shadow black keyboard with numeric keypad and NKRO Anti-Ghosting Key technology
HP Imagepad
Features
NVIDIA® G-SYNC® support
Security management
Camera privacy shutter; Trusted Platform Module (Firmware TPM) support
Sensors
IR thermal sensor

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Footnotes

Messaging Footnotes

[1] Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost/ for more information. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third-party software may have specific configuration or compatibility requirements. Potential NPU inferencing performance varies by use, configuration, software and other factors.
[2] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.
[3] ©2025 NVIDIA Corporation. NVIDIA, the NVIDIA logo, GeForce, and GeForce RTX are registered trademarks and/or trademarks of NVIDIA Corporation in the United States and other countries. All other trademarks and copyrights are the property of their respective owners.
[4] All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower. Eyesafe® Display for Low Blue Light is the Display Compliance Test Specification quality. See https://eyesafe.com for more details. Display measured diagonally
[5] All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary, either higher or lower.
[6] The flicker-free capability eliminates screen flickering through integrating DC-dimming LED backlights.
[7] All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
[8] Subscription continues automatically at regular monthly price unless cancelled. Subject to https://www.xbox.com/legal/subscription-terms. Benefits vary by Xbox Game Pass plan. Game library varies over time, by region, device, and Xbox Game Pass plan. xbox.com/gamepass. In-game benefits vary by game, region, and over time. Game must be installed to access in-game benefits. For a list of cloud and non-cloud markets and supported regions, visit: xbox.com/regions. Terms apply, see xbox.com/gamepass for more. Excludes HP Chromebooks.
[9] Keyboard components contain post-consumer recycled materials. Percentage of post consumer recycled contained in each component varies by product.
[10] Wi-Fi 7: Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires compatible Windows 11 OS, compatible processor, and separately purchased Wi-Fi 7 router to support backwards compatibility with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices. Bluetooth® 6.0 operation requires Microsoft OS/Chrome OS support. Until Microsoft OS/Chrome OS support is available, Bluetooth® 6.0 will function as Bluetooth® 5.4 or lower.
[11] 8K content required to view 8K images. DisplayPort™ and the DisplayPort™ logo are trademarks owned by the Video Electronics Standards Association (VESA®) in the United States and other countries. Display measured diagonally
[12] For storage drives, GB = 1 billion bytes, TB = 1 trillion bytes. Actual formatted capacity is less. Portion of internal storage is reserved for preloaded content.
[13] Listening to personal stereo equipment at full volume for long periods can damage the user's hearing. To reduce the risk of hearing damage, lower the volume and amount of time listening at full volume.

Technical Specifications Footnotes

[1] 100 GB of free Dropbox storage for 3 months from date of registration. For complete details and terms of use, including cancellation policies, visit the Dropbox website at https://www.dropbox.com/help/space/hp-promotion. Internet service required and not included.
[2] Internet access required and not included. McAfee is pre-installed on your PC and an account is required for activation. Subscription renewal required after trial period. VPN feature is not available in India, China, Syria or North Korea. McAfee is not compatible with Windows 11 in S mode. You'll need to permanently switch out of S mode. There's no charge to switch out of S mode, but you won't be able to turn it back on.
[5] Recharges your battery up to 50% within 30 minutes when the system is off using "shut down" command, using HP adapter provided with the notebook or recommended power adapter disclosed in specifications (see http://store.hp.com). After charging has reached 50% capacity, charging speed will return to normal speed. Charging time may vary +/-10% due to System tolerance. Available on select HP products.
[6] Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
[7] Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost/ for more information.
[12] Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 2024, select Intel® Core™ or Intel® Core™ Ultra processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices.
[17] All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
[18] Percent of active plus nonactive viewing area to active viewing area plus border. Measure with lid vertical to the desk.
[19] For best results with HP Sleep and Charge, use a USB charging protocol standard cable or cable adapter with an external device.
[21] TUV Low Blue Light is the Display Compliance Test Specification quality. See https://www.certipedia.com/?locale=en#search for more details.
[23] Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.
[24] Must activate within 180 days of Windows activation.
[26] DisplayHDR™ is the high-performance Display Compliance Test Specification from VESA specifying HDR (High Dynamic Range) quality. See http://displayhdr.org for more details.
[27] Based on U.S. EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit www.epeat.net for more information.
[28] Eyesafe® Display for Low Blue Light is the Display Compliance Test Specification quality. See https://eyesafe.com for more details.
[37] Weight and system dimensions may fluctuate due to configuration and manufacturing variances.
[39] Percentage of ocean-bound plastic contained in each component varies by product.
[40] Laptops manufactured with recycled metal material in product cover. Percentage of recycled metal varies by product.
[41] Keyboard components contain post-consumer recycled materials. Percentage of post consumer recycled contained in each component varies by product.
[42] For optimal performance and battery chargeability while gaming and rendering, use the power adapter that ships with the PC. You can use the 100W/20V Type-C adapter or power bank when running light loading tasks. System-off charging is only supported on 20V Type-C adapter or power bank.
[46] Bluetooth® 6.0 operation requires Microsoft OS/Chrome OS support. Until Microsoft OS/Chrome OS support is available, Bluetooth® 6.0 will function as Bluetooth® 5.4 or lower.
[50] Copilot in Excel requires AutoSave to be enabled, meaning the file must be saved to OneDrive; it doesn't function with unsaved files. Copilot features in Outlook apply to accounts with @outlook.com, @hotmail.com, @live.com, or @msn.com email addresses and are available in Outlook.com, Outlook built into Windows, Outlook on Mac, and iOS and Android apps. AI features only available to Microsoft 365 Family subscription owner and cannot be shared; usage limits apply. Learn more Learn more Understanding AI credits - Microsoft Support . Microsoft Copilot features in Microsoft 365 are not available in China or Macao SAR.
[52] Front height measurement is near the front edge where the chassis bottom cover taper begins. Back height measurement is near the back edge where the chassis bottom cover taper ends, excluding transition area to rubber feet and hinge cap.
[53] The Flicker-free capability is eliminating screen flickering through integrating DC-dimming LED backlights or LED emissions. OLED panel is functional with DC-DIMMING when above 100nits.

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