



The science behind the report:

Get stronger app performance unplugged with Snapdragon X Plus processor-powered laptops

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report [Get stronger app performance unplugged with Snapdragon X Plus processor-powered laptops](#).

We concluded our hands-on testing on October 15, 2025. During testing, we determined the appropriate hardware and software configurations and applied updates as they became available. The results in this report reflect configurations that we finalized on September 9, 2025 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

Our results

To learn more about how we have calculated the wins in this report, go to <http://facts.pt/calculating-and-highlighting-wins>. Unless we state otherwise, we have followed the rules and principles we outline in that document.

Table 1: Battery life test results.

	Snapdragon X Plus processor-powered Dell Latitude 5455	Intel Core Ultra 5 (Lunar Lake) processor-based HP EliteBook 8 G1i 14"	Comparison (%)
Microsoft Teams 3x3 video conference			
Total Duration (min) - Median (higher is better)	652	449	45.21%
Battery Life (minutes per WHr) - Normalized (higher is better)	12.1	7.2	66.72%

Table 2: Benchmark results, with the systems in Balanced mode and unplugged.

	Snapdragon X Plus processor-powered Dell Latitude 5455	Intel Core Ultra 5 (Lunar Lake) processor-based HP EliteBook 8 G1i 14"	Comparison (%)
Geekbench 6 (Balanced Performance Mode)			
CPU Multi-Core Score (Higher is better) - Median	8,859	9,068	-2.3%
CPU Single-Core Score (Higher is better) - Median	2,382	2,251	5.8%
Procyon Office Productivity (Balanced Performance Mode)			
Overall Rating - Median (higher is better)	5,327	4,794	11.1%
Word Score - (higher is better)	6,378	6,246	2.1%
Excel Score - (higher is better)	5,245	4,123	27.2%
PowerPoint Score - (higher is better)	5,310	4,995	6.3%
Outlook Score - (higher is better)	3,861	3,521	9.6%
PCMark 10 Benchmark - Applications Test (Balanced Mode)			
Overall Rating - Median (higher is better)	11,567	10,507	10.0%
Word Sub-score (higher is better)	7,010	6,783	3.3%
Excel Sub-score (higher is better)	21,050	18,496	13.8%
PowerPoint Sub-score (higher is better)	10,302	8,440	22.0%
Edge Sub-score (higher is better)	11,776	11,514	2.2%
Cinebench 2024 (2024.1.0) (Balanced Performance Mode)			
CPU Multi-Core - Median (higher is better)	741	539	37.4%
CPU Single-Core - Median (higher is better)	107	102	4.9%

System configuration information

Table 3: Detailed information on the systems we tested.

System configuration information	Dell Latitude 5455	HP EliteBook 8 G1i 14"
Processor		
Vendor	Qualcomm	Intel
Model number	Snapdragon® X Plus X1P-42-100	Intel® Core™ Ultra 5 Processor 228V
Core frequency (GHz)	3.4	2.1-4.5
Number of cores	8	8
Number of threads	8	8
NPU TOPS	45	40
Memory		
Amount (GB)	16	16
Type	LPDDR5x	DDR5
Graphics		
Vendor	Qualcomm	Intel
Model number	Adreno X1-45	Arc™ 130V GPU
Storage		
Amount (GB)	512	512
Connectivity/expansion		
Wireless internet	Qualcomm® FastConnect™ 7800 Wi-Fi 7 2x2, BT 5.4 Wireless	Intel® BE201 Wi-Fi 7 and Bluetooth® 5.4
Battery		
Rated capacity (Whr)	54	62
Display		
Size (in.)	14	14
Resolution	1,920 x 1,200	1,920 x 1,200
Operating system		
Vendor	Microsoft	Microsoft
Name	Windows 11 Pro	Windows 11 Pro
Version	24H2 (Build 26100.6584)	24H2 (Build 26100.6584)
Dimensions		
Height (in.)	8.81	8.74
Width (in.)	12.36	12.43
Depth (in.)	0.63	0.61
Weight (lb.)	3.37	3.06

How we tested

Setting up the systems

Setting up and updating the OEM image

1. Boot the system.
2. Follow the on-screen instructions to complete installation, using the default selections when appropriate.
3. Set the Windows (plugged in) Power Mode to Balanced or Best Power Efficiency based on the test.
4. Set Screen and Sleep options to Never:
 - a. Right-click the desktop, and select Display settings.
 - b. From the left column, select System.
 - c. Click Power & Battery.
 - d. For all power options listed under Screen and Sleep, select Never.
5. Disable User Account Control notifications:
 - a. Select Windows Start, type UAC, and press the Enter key.
 - b. Move the slider control to Never notify, and click OK.
6. Run Windows Update, and install all updates available.
7. Run the OEM's Support Assistant utility, and install all recommended BIOS and driver updates available.
8. Verify the date and time are correct, and synchronize the system clock with the time server.
9. Pause Automatic Windows Updates:
 - a. Click Windows Start.
 - b. Type Windows Update settings and press the Enter key.
 - c. From the Pause updates drop-down menu, select Pause for 5 weeks.

Capturing an image

1. Connect an external HDD to the system.
2. Click Windows Menu, and type Control Panel in the search bar. Click Control Panel→System and Security→Backup and Restore (Windows 7)→Create a system image.
3. Verify that the external HDD is selected as the save drive, and click Next.
4. Verify that all drives are selected to back up, and click Next.
5. Click Start backup.
6. When you see the prompt to create a system repair disc, select No, and close the dialogs.

Restoring an image

1. Connect an external HDD to the system.
2. Press and hold the Shift key while restarting the system.
3. Select Troubleshoot.
4. Select Advanced options.
5. Select See more recovery options.
6. Select System image recovery.
7. Select the User account.
8. Enter the system password, and click Continue.
9. At the Restore system files and settings screen, select Next.
10. Verify that the external HDD is selected, and click Next.
11. Once the recovery has completed, click Finish.

Measuring battery life with Microsoft Teams collaboration (3x3 gallery view)

This test requires the following:

- Nine non-testing systems as permanent meeting attendees; one of these with a licensed account to host.
- Microsoft Teams
- PT internal battery life logger

Setting up the test

1. Boot the systems under test.
2. Verify the following display and power settings:
 - a. Right-click the desktop, and select Display settings.
 - b. Uncheck the box next to Change brightness automatically when lighting changes, if available.
 - c. Uncheck the box next to Change brightness based on content, if available.
 - d. In the Scale drop-down menu, select 100%.
 - e. From the pane on the left, select System.
 - f. Click Power & Battery.
 - g. For all power options listed under Screen and Sleep, select Never.
 - h. Set Power mode while unplugged to Best Power Efficiency.
3. To bring up a white screen, open a web browser, and type `about:blank` into the address bar.
4. Unplug the system.
5. Using a nit meter, adjust the screen brightness to as close to 200 nits as possible.
6. Plug in the system.
7. Open Settings, and click Bluetooth & Devices.
8. Click Cameras, and click the built-in connected camera.
9. Under Windows Studio Effects, turn on all settings.
10. Copy the battery life logger to each system under test.
11. Open PowerShell as administrator, and run `Set-ExecutionPolicy Unrestricted`
12. On one of the non-testing systems, launch Teams, and log into a licensed Microsoft account.
13. In the pane on the left, click Calendar.
14. Click Meet Now, and click Start Meeting.
15. Ensure the camera is turned on, and click Join now.
16. In the top toolbar, click More, and click Meeting Info.
17. Note the Meeting ID and Passcode.
18. On the remaining eight non-testing systems, launch Teams, and click Join a meeting.
19. Enter the Meeting ID and Passcode, and click Join meeting.
20. Ensure the camera is turned on, and click Join now.

Running the test

1. Verify that the system's battery is fully charged.
2. Launch Teams, and click Join a meeting.
3. Enter the Meeting ID and Passcode, and click Join meeting.
4. Ensure the camera and audio are turned on, and click Join now.
5. In the top toolbar, click View.
6. Ensure Gallery View is selected, and set the Max Gallery Size to 9 people.
7. Open PowerShell as administrator, and navigate to the directory containing the battery life logger script.
8. Type `.\<battery_script_name>.ps1` and press Enter to run the script.
9. Unplug the system when prompted, and switch back to the Teams meeting.
10. When the system has shut down, plug in the system, and start it.
11. In Explorer, navigate to `C:\ProgramData\ptbat\`.
12. Open the folder corresponding with the date and time of the test, and record the results from `batresults_minutes.txt`.
13. Repeat steps 1 through 12 twice more.

Testing with Cinebench 2024

Setting up the test

1. Download and install Cinebench 2024 from <https://www.maxon.net/en/downloads/cinebench-2024-downloads>.
2. Launch Cinebench 2024.
3. Select File→Advanced benchmark.
4. From the Minimum Test Duration drop-down menu, select Off.
5. Set power mode Balanced or Best Power Efficiency (as desired) when testing.

Running the multi-core test

1. Launch Cinebench 2024.
2. Next to CPU (Multi Core), click Start.
3. Record the result.
4. Wait 10 minutes before rerunning.
5. Repeat steps 1 through 4 twice more.

Running the single-core test

1. Launch Cinebench 2024.
2. Next to CPU (Single Core), click Start.
3. Record the result.
4. Wait 10 minutes before rerunning.
5. Repeat steps 1 through 4 twice more.

Testing with Geekbench 6 Pro

Setting up the test

1. Purchase a Geekbench Pro license, and download and install Geekbench 6 Pro from <https://www.geekbench.com/download/>.
2. Set power mode to Best Performance and Balanced when testing.

Running the test

1. Boot the system.
2. Launch Geekbench.
3. Click Run CPU Benchmark.
4. When the benchmark completes, record the results.
5. Repeat steps 1 through 4 twice more.

Testing with the Procyon Office Productivity benchmark

Setting up the test

1. Install a licensed version of Microsoft 365, and verify the system is signed into the following apps: Excel, PowerPoint, and Word.
2. Purchase and download the Procyon Benchmark Suite from <https://benchmarks.ul.com/procyon>.
3. Install the Procyon benchmark.
4. Double-click the installer.
5. Click Next.
6. Click to agree to the EULA, and click Next.
7. Click Next.
8. Launch Procyon.
9. Select Settings, and input the license key.
10. Close Procyon.
11. Set power mode to Balanced and Best Power Efficiency when testing.

Running the test

1. Launch Procyon.
2. Select the Office Productivity Benchmark.
3. To begin the test, click the Office Productivity Benchmark Run button.
4. When the test completes, record the results, and wait 15 minutes before rerunning.
5. Repeat steps 3 and 4 twice more.

Testing with the PCMark 10 Applications benchmark

Setting up the test

1. Install a licensed version of Microsoft 365, and verify the system is signed into the following apps: Excel, PowerPoint, and Word.
2. Purchase and download the PCMark 10 benchmark from <https://benchmarks.ul.com/pcmark10>.
3. Install PCMark 10.
4. Launch PCMark 10.
5. Select Business Edition and input the license key.
6. Close PCMark 10.
7. Set power mode to Balanced when testing.

Running the test

1. Boot the system.
2. Launch PCMark 10.
3. Select More Tests and select PCMark 10 Applications.
4. Click Run to begin the test.
5. When the test completes, record the results and shut down the system.
6. Repeat steps 1 through 5 twice more, and record the median results.

Read the report ►

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