

# ThinkPad X1 Carbon (7<sup>th</sup> Gen) Platform Specifications

Product Specifications Reference (PSREF)

Processor	<p>8th Generation Intel® Core™ i5 / i7 Processor</p> <table border="1"> <thead> <tr> <th>Processor Number</th> <th># of Cores</th> <th># of Threads</th> <th>Base Frequency</th> <th>Max Turbo Frequency</th> <th>Cache</th> <th>Memory Types</th> <th>Processor Graphics</th> </tr> </thead> <tbody> <tr> <td>i5-8265U</td> <td rowspan="4">4</td> <td rowspan="4">8</td> <td>1.6 GHz</td> <td>3.9 GHz</td> <td>6MB</td> <td rowspan="4">LPDDR3-2133</td> <td rowspan="4">Intel UHD Graphics</td> </tr> <tr> <td>i5-8365U</td> <td>1.6 GHz</td> <td>4.1 GHz</td> <td>6MB</td> </tr> <tr> <td>i7-8565U</td> <td>1.8 GHz</td> <td>4.6 GHz</td> <td>8MB</td> </tr> <tr> <td>i7-8665U</td> <td>1.9 GHz</td> <td>4.8 GHz</td> <td>8MB</td> </tr> </tbody> </table> <p>or 10th Generation Intel Core i5 / i7 Processor (NOT available in EMEA)</p> <table border="1"> <thead> <tr> <th>Processor Number</th> <th># of Cores</th> <th># of Threads</th> <th>Base Frequency</th> <th>Max Turbo Frequency</th> <th>Cache</th> <th>Memory Types</th> <th>Processor Graphics</th> </tr> </thead> <tbody> <tr> <td>i5-10210U</td> <td rowspan="2">4</td> <td rowspan="2">8</td> <td>1.6 GHz</td> <td>4.2 GHz</td> <td>6MB</td> <td rowspan="2">LPDDR3-2133</td> <td rowspan="2">Intel UHD Graphics</td> </tr> <tr> <td>i7-10510U</td> <td>1.8 GHz</td> <td>4.9 GHz</td> <td>8MB</td> </tr> <tr> <td>i7-10710U</td> <td>6</td> <td>12</td> <td>1.1 GHz</td> <td>4.7 GHz</td> <td>12MB</td> <td></td> <td></td> </tr> </tbody> </table>	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	i5-8265U	4	8	1.6 GHz	3.9 GHz	6MB	LPDDR3-2133	Intel UHD Graphics	i5-8365U	1.6 GHz	4.1 GHz	6MB	i7-8565U	1.8 GHz	4.6 GHz	8MB	i7-8665U	1.9 GHz	4.8 GHz	8MB	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types	Processor Graphics	i5-10210U	4	8	1.6 GHz	4.2 GHz	6MB	LPDDR3-2133	Intel UHD Graphics	i7-10510U	1.8 GHz	4.9 GHz	8MB	i7-10710U	6	12	1.1 GHz	4.7 GHz	12MB			<p>Dimensions <i>WxDxH (Privacy Guard):</i> 12.72" x 8.54" x 0.61"; 323mm x 217mm x 15.4mm  <i>WxDxH (other model):</i> 12.72" x 8.54" x 0.59"; 323mm x 217mm x 14.95mm                  Weight <i>Privacy Guard model:</i> starting at 2.66 lb / 1.21 kg;  <i>Other model:</i> starting at 2.4 lb / 1.09 kg                  Case color Black paint or black weave                  Case material <i>Display cover:</i> Carbon Fiber;  <i>Bottom:</i> magnesium alloy</p>
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Graphics	<p>Intel UHD Graphics in processor; supports external digital monitor via HDMI or USB Type-C / Thunderbolt; supports three independent displays; Max resolution: 5K@60Hz (Thunderbolt); 4K@24Hz (HDMI)</p>	<p>Smart card reader None                  Media reader None                  Ports Two USB 3.1 Gen 1 (one Always On), two USB 3.1 Type-C Gen 2 / Thunderbolt 3 (with the function of Power Delivery and DisplayPort), HDMI 1.4b, Ethernet extension connector, nano-SIM card slot (WWAN models), headphone / microphone combo jack, side docking connector, security keyhole  <i>* Depending on many factors, actual data transfer speed may be lower than theoretical speed</i>                  Monitor cable Optional: Lenovo HDMI to VGA Monitor Adapter                  Bundled Accy Optional: ThinkPad Ethernet Extension Adapter Gen 2</p>																																																								
Chipset	<p>Intel SoC (System on Chip) platform</p>	<p>Camera (optional) One of the following, configurable by model:                  • HD720p camera with ThinkShutter camera privacy, fixed focus                  • IR camera and HD720p camera with ThinkShutter camera privacy, fixed focus</p>																																																								
Memory	<p>8GB or 16GB / 2133MHz LPDDR3 / soldered to systemboard, no sockets</p>	<p>Audio support HD Audio, Realtek® ALC3286 codec / Dolby® Atmos™ speaker system, 2W x 2, 0.8 x 2 / four 360° far-field microphones, headphone / microphone combo jack</p>																																																								
Display	<table border="1"> <thead> <tr> <th>Size</th> <th>Resolution</th> <th>Type</th> <th>Surface</th> <th>Brightness</th> <th>Aspect Ratio</th> <th>Contrast Ratio</th> <th>Color Gamut</th> <th>Viewing Angle</th> </tr> </thead> <tbody> <tr> <td>14.0"</td> <td>FHD (1920x1080) Multi-touch</td> <td>IPS</td> <td>Anti-reflection Anti-smudge</td> <td>300 nits</td> <td>16:9</td> <td>700:1</td> <td>72%</td> <td>170°</td> </tr> <tr> <td>14.0"</td> <td>FHD (1920x1080) Low Power</td> <td>IPS</td> <td>Anti-glare</td> <td>400 nits</td> <td>16:9</td> <td>800:1</td> <td>72%</td> <td>170°</td> </tr> <tr> <td>14.0"</td> <td>FHD (1920x1080) ThinkPad Privacy Guard</td> <td>IPS</td> <td>Anti-glare</td> <td>400 nits</td> <td>16:9</td> <td>1000:1</td> <td>72%</td> <td>170°</td> </tr> <tr> <td>14.0"</td> <td>WQHD (2560x1440)</td> <td>IPS</td> <td>Anti-glare</td> <td>300 nits</td> <td>16:9</td> <td>700:1</td> <td>72%</td> <td>170°</td> </tr> <tr> <td>14.0"</td> <td>UHD (3840x2160) HDR 400, Dolby Vision™</td> <td>IPS</td> <td>Glossy</td> <td>500 nits</td> <td>16:9</td> <td>1400:1</td> <td>90%</td> <td>170°</td> </tr> </tbody> </table>	Size	Resolution	Type	Surface	Brightness	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	14.0"	FHD (1920x1080) Multi-touch	IPS	Anti-reflection Anti-smudge	300 nits	16:9	700:1	72%	170°	14.0"	FHD (1920x1080) Low Power	IPS	Anti-glare	400 nits	16:9	800:1	72%	170°	14.0"	FHD (1920x1080) ThinkPad Privacy Guard	IPS	Anti-glare	400 nits	16:9	1000:1	72%	170°	14.0"	WQHD (2560x1440)	IPS	Anti-glare	300 nits	16:9	700:1	72%	170°	14.0"	UHD (3840x2160) HDR 400, Dolby Vision™	IPS	Glossy	500 nits	16:9	1400:1	90%	170°	<p>Keyboard 6-row, spill-resistant, multimedia Fn keys, LED backlight                  UltraNav™ TrackPoint® pointing device and buttonless glass surface multi-touch touchpad</p> <p>Security Power-on password, hard disk password, supervisor password, security keyhole                  Security chip • Firmware TPM 2.0 integrated in chipset                  • Discrete TPM 2.0 TCG Certified                  • Discrete TPM 2.0 with L3 Security Support (special bid only)  <i>* May be disabled in some region</i></p> <p>System Mgt (opt) Intel vPro Technology                  Fingerprint reader Touch style match on chip fingerprint reader on the palm rest                  NFC (optional) Near Field Communication</p> <p>Battery Integrated Li-Polymer 51Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter                  Max battery life <i>MobileMark® 2014:</i> 18.3 hr  <i>* Battery life varies significantly with hardware configurations, settings, usage, &amp; other factors</i></p> <p>AC adapter • 45W USB-C AC adapter                  • 65W USB-C AC adapter                  • 65W USB-C slim AC adapter</p>		
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Multi-touch (opt)	<p>Capacitive-type multi-touch, supports 10-finger gesture (FHD only), anti-reflection (AR) / anti-smudge (AS) coating</p>	<p>Operating system <i>Optional:</i> Windows® 10 Home 64 or Windows 10 Pro 64</p>																																																								
Storage	<p><i>One of the following, configurable by model:</i></p> <ul style="list-style-type: none"> <li>• M.2 2280 SSD / SATA 6.0Gb/s</li> <li>• M.2 2280 SSD / PCIe NVMe 3.0 x 4</li> <li>• Intel Optane Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4</li> </ul>	<p>Limited warranty • 1-year depot repair service                  • 1-year depot with 2-year system board repair service                  • 1-year limited onsite service                  • 1-year + 2-year depot repair service                  • 1-year + 2-year limited onsite service                  • 3-year/1-yr battery depot repair service                  • 3-year/1-yr battery limited onsite service</p>																																																								
Optical	<p>None</p>	<p>Mil-Spec test MIL-STD-810G military testing</p>																																																								
Ethernet	<p>Native Intel Ethernet Connection I219-V (Non-vPro) or I219-LM (vPro) via optional ThinkPad Ethernet Extension Adapter Gen 2</p>	<p>Environment EPEAT™ Gold; ENERGY STAR® 8.0; TCO Certified; RoHS-compliant</p>																																																								
WLAN + Bluetooth™	<p>Intel Wireless-AC 9560, Wi-Fi 2x2 802.11ac + Bluetooth™ 5.1  <i>* BT5.1 is supported on Windows 10 version 2004 or above (limited to BT5.0 on earlier version)</i></p>																																																									
WWAN (optional)	<ul style="list-style-type: none"> <li>• Wireless WAN upgradable (special bid only)</li> <li>• Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card</li> <li>• Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card</li> <li><i>* For non-WWAN model, it means the model is NOT WWAN upgradable</i></li> </ul>																																																									
SIM card (opt)	<ul style="list-style-type: none"> <li>• Verizon LTE (US) SIM card</li> <li>• Gemalto eSIM</li> </ul>																																																									

Note: The specifications above may not be available in all regions and might change by regions.

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