

# ThinkPad P51 Platform Specifications

Product Specifications Reference (PSREF)

Processor	7th Generation Intel® Core™ i7 Processor or Intel Xeon® Processor E3 v6 Family							Dimensions <i>WxDxH:</i> 14.86" x 9.93" x 0.96-1.16"; 377.4mm x 252.3mm x 24.5-29.4mm <i>WxDxH(Touch):</i> 14.86" x 9.93" x 1.02-1.21"; 377.4mm x 252.3mm x 25.8-30.7mm										
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Types		Weight <table border="1"> <thead> <tr> <th>Models</th> <th>4-cell</th> <th>6-cell</th> </tr> </thead> <tbody> <tr> <td><i>Non-touch</i></td> <td>5.6 lb / 2.55kg</td> <td>5.9 lb / 2.67kg</td> </tr> <tr> <td><i>Multi-touch</i></td> <td>6.2 lb / 2.82kg</td> <td>6.4 lb / 2.90kg</td> </tr> </tbody> </table>	Models	4-cell	6-cell	<i>Non-touch</i>	5.6 lb / 2.55kg	5.9 lb / 2.67kg	<i>Multi-touch</i>	6.2 lb / 2.82kg	6.4 lb / 2.90kg
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i7-7700HQ	4	8	2.8 GHz	3.8 GHz	6MB	DDR4-2400	Intel HD Graphics 630											
i7-7820HQ			2.9 GHz	3.9 GHz			Intel HD Graphics P630											
E3-1505M v6			3.0 GHz	4.0 GHz	8MB		Intel HD Graphics P630											
E3-1535M v6			3.1 GHz	4.2 GHz														

Graphics	Intel HD Graphics 630 or P630 in processor and NVIDIA Quadro® M1200 or M2200, 4GB memory; supports external digital monitor via HDMI, Mini DisplayPort, or Thunderbolt™; supports four independent displays; Max resolution: 3840x2160@60Hz (DisplayPort via Mini DisplayPort cable); 3840x2160@60Hz (Thunderbolt); 4096x2160@24Hz (HDMI)	Smart card reader ExpressCard Media reader Ports	<i>Optional:</i> Smart card reader One slot (ExpressCard/34) 4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card Four USB 3.1 Gen 1 (USB 3.0, one Always On), USB Type-C / Thunderbolt 3, Mini DisplayPort 1.2a, HDMI 1.4b, Ethernet (RJ-45), Dock connector
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Chipset	Mobile Intel CM238 Chipset	Camera ( <i>optional</i> )	HD720p resolution, fixed focus
Memory	64GB max <sup>7</sup> / 2400MHz DDR4, ECC or non-ECC (ECC function supported only on Xeon processor), dual-channel capable, four DDR4 SO-DIMM sockets	Audio support	HD Audio, Realtek® ALC3268 codec / stereo speakers, 2W x 2 / dual array microphone, combo audio/microphone jack

Display	<i>Some:</i> 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 700:1 contrast ratio, 160° viewing angle <i>Some:</i> 15.6" (396mm) 4K (3840x2160), anti-glare, LED backlight, IPS, 300 nits, 16:9 aspect ratio, 1000:1 contrast ratio, 100% gamut, 170° viewing angle	Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight 3-button TrackPoint® pointing device and 3-button Mylar surface multi-touch touchpad
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Multi-touch ( <i>opt</i> ) Pen ( <i>optional</i> )	Capacitive-type multi-touch, supports 10-finger gesture, 220 nits (FHD only) ThinkPad Pen Pro, active pen for multi-touch display	Security Security chip vPro ( <i>optional</i> )	Power-on password, hard disk password, supervisor password, security keyhole Discrete TPM 2.0, TCG Certified Intel vPro Technology
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Storage	<i>Up to 3 drives (two M.2 SSD and one HDD)</i> <i>Some:</i> M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s <i>Some:</i> HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Active Protection System™	Fingerprint reader	Touch style match on chip fingerprint reader on the palm rest
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Optical	None	Color calibration NFC	<i>Optional:</i> Pantone® color calibrator by X-Rite® color calibration sensor in palm rest None
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Ethernet	<i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville) <i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)	Battery	Lithium Polymer 4-cell (66Wh) or 6-cell (90Wh)
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WLAN Bluetooth™	Intel Dual Band Wireless-AC 8265, Wi-Fi 2x2 802.11ac + BT4.1, M.2 card Bluetooth 4.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter * Intel 8265ac card support BT4.2 but is limited to BT4.1 by Windows OS	Max battery life <sup>10</sup> (MobileMark® 2014)	<table border="1"> <thead> <tr> <th>Model</th> <th>4-cell</th> <th>6-cell</th> </tr> </thead> <tbody> <tr> <td><i>Discrete Graphics</i></td> <td>4.5 hr</td> <td>6.1 hr</td> </tr> <tr> <td><i>Hybrid Graphics</i></td> <td>6.5 hr</td> <td>8.9 hr</td> </tr> </tbody> </table>	Model	4-cell	6-cell	<i>Discrete Graphics</i>	4.5 hr	6.1 hr	<i>Hybrid Graphics</i>	6.5 hr	8.9 hr
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WWAN ( <i>optional</i> )	<i>One of the following, configurable by model:</i> • Wireless WAN upgradable • Integrated Mobile Broadband 4G LTE-A, Qualcomm® Snapdragon™ X7 LTE-A (Sierra Wireless EM7455), M.2 card	AC adapter	170W AC adapter
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SIM card ( <i>opt</i> )	Micro-SIM card slot, opt Verizon LTE (US) or Lenovo® Connect (EMEA) SIM card	Preload	<i>Some:</i> Windows® 10 Home 64 <i>Some:</i> Windows 10 Pro 64 • Lenovo Companion • Lenovo Setting • Microsoft Office preloaded; purchase a product key to activate
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		Limited warranty	<i>One of the following, configurable by model:</i> • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service
		Mil-Spec test	MIL-STD-810G military certification
		Environment	PEAT™ Gold (US only); ENERGY STAR® 6.1; RoHS-compliant