

# ThinkPad P50 20EN004RUS

**Region**  
US

**Machine Type**  
20EN

**TopSeller**  
TopSeller

**Processor**  
Xeon E3-1505M v5 (4C, 2.8 / 3.7GHz, 8MB)

**vPro**  
vPro

**Graphics**  
NVIDIA Quadro M2000M 4GB

**Chipset**  
Intel CM236

**Memory**  
16GBx1 non-ECC

**Display**  
15.6" 4K (3840x2160) IPS

**Multi-touch**  
None

**Pen**  
None

**Storage**  
512GB SSD M.2 PCIe NVMe

**RAID**  
No

**Optical**  
None

**WLAN + Bluetooth**  
Intel 8260 ac, 2x2 + BT4.1

**WWAN**  
WWAN Upgradable

**SIM Card**  
None

**Smart Card Reader**  
None

**Camera**  
720p

**Keyboard**  
Backlit

**Fingerprint Reader**  
Fingerprint Reader

**Color Calibrator**  
X-Rite

**Battery**  
6-cell (90Wh)

**Power Adapter**  
170W Slim Tip

**Operating System**  
Windows 10 DG Windows 7 Pro 64

**Warranty**  
3-year, Depot

**End of Support**  
Mar 6, 2024

**Ann Date (mm/yy)**  
02/18

## Note:

Country Code "US" is for United States, "++" is for EMEA countries (e.g. AD - Saudi, Arabia, AT - Austria, BM - Bulgaria, etc.), "xx" is for EAST countries (e.g. BM - Bulgaria, CX - Hungary, CY - Cyprus, etc.), and "\*\*\*" is for MEA countries (e.g. AD - Saudi, Arabia, ED - Egypt, EQ - Sweden, etc.). Please be aware that the EMEA/ EAST/MEA models listed above might not be available in all countries

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# ThinkPad P50 Platform Specifications

Product Specifications Reference (PSREF)

|                         |                                                                                                                                                                                                                                                                                                                                                                  |                 |              |                |                     |       |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|----------------|---------------------|-------|--------------|-----------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|-----------------|-------------|-------------------|-----------------|--------|-----------------|--------|---------|
| Processor               | 6th Generation Intel® Core™ i7 Processor or Intel Xeon® Processor E3 v5 Family                                                                                                                                                                                                                                                                                   |                 |              |                |                     |       |              |                       | Smart card reader<br>ExpressCard<br>Media reader<br>Ports | Optional: Smart card reader<br>One slot (ExpressCard/34)<br>4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card<br>Four USB 3.0 (one Always On), USB Type-C / Thunderbolt 3, Mini DisplayPort, HDMI, Ethernet (RJ-45), Dock connector                                                                                                              |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
|                         | Processor Number                                                                                                                                                                                                                                                                                                                                                 | # of Cores      | # of Threads | Base Frequency | Max Turbo Frequency | Cache | Memory Types | Processor Graphics    |                                                           | Camera (optional)<br>Audio support                                                                                                                                                                                                                                                                                                                          | HD720p resolution, low light sensitive, fixed focus<br>HD Audio, Realtek® ALC3268 codec / stereo speakers, 1.5W x 2 / dual array microphone, combo audio/microphone jack |           |                 |                 |             |                   |                 |        |                 |        |         |
|                         | i7-6700HQ                                                                                                                                                                                                                                                                                                                                                        | 4               | 8            | 2.6 GHz        | 3.5 GHz             | 6MB   | DDR4-2133    | Intel HD Graphics 530 |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
|                         | i7-6820HQ                                                                                                                                                                                                                                                                                                                                                        |                 |              | 2.7 GHz        | 3.6 GHz             | 8MB   |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
|                         | E3-1505M v5                                                                                                                                                                                                                                                                                                                                                      |                 |              | 2.8 GHz        | 3.7 GHz             | 8MB   |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| E3-1535M v5             | 2.9 GHz                                                                                                                                                                                                                                                                                                                                                          |                 |              | 3.8 GHz        | 8MB                 |       |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Graphics                | Intel HD Graphics 530 or P530 in processor and NVIDIA Quadro® M1000M (2GB or 4GB memory) or M2000M (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); 3840x2160@30Hz (HDMI) |                 |              |                |                     |       |              |                       | Keyboard UltraNav™                                        | 6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight<br>3-button TrackPoint® pointing device and 3-button crystal silk surface multi-touch touchpad                                                                                                                                                                           |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Chipset                 | Mobile Intel CM236 Chipset (Intel GL82CM236 PCH)                                                                                                                                                                                                                                                                                                                 |                 |              |                |                     |       |              |                       | Security                                                  | Power-on password, hard disk password, supervisor password, security keyhole                                                                                                                                                                                                                                                                                |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Memory                  | 64GB max <sup>7</sup> / 2133MHz DDR4, ECC or non-ECC (ECC function supported only on Xeon processor), dual-channel capable, four DDR4 SO-DIMM sockets                                                                                                                                                                                                            |                 |              |                |                     |       |              |                       | Security chip ThinkEngine                                 | Discrete TPM 1.2 TCG Certified and Firmware TPM 2.0 integrated in chipset<br>Delivers improved thermal and power efficiency, up to 30 day standby, faster resume time, enhanced security, as well as anti-tampering measures                                                                                                                                |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Display                 | <i>Some:</i> 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, IPS, 250 nits, 16:9 aspect ratio, 600:1 contrast ratio, 45% gamut, 160° viewing angle<br><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, 178° viewing angle                                    |                 |              |                |                     |       |              |                       | vPro (optional)                                           | Intel vPro Technology                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Multi-touch (opt)       | Capacitive-type multi-touch, supports 10-finger gesture, 220 nits                                                                                                                                                                                                                                                                                                |                 |              |                |                     |       |              |                       | Fingerprint reader                                        | Touch style fingerprint reader on the palm rest                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Pen (optional)          | ThinkPad Pen Pro, active pen for multi-touch display                                                                                                                                                                                                                                                                                                             |                 |              |                |                     |       |              |                       | Color calibration                                         | Optional: Pantone® color calibrator by X-Rite® color calibration sensor in palm rest                                                                                                                                                                                                                                                                        |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Storage                 | <i>Up to 3 drives (two M.2 SSD and one HDD)</i><br>• HDD / SATA 6.0Gb/s, 2.5" wide, 7mm high, Shock Mounted Hard Drive, Active Protection System™<br>• M.2 SSD / SATA 6.0Gb/s (e.g. xxxGB SSD M.2)<br>• M.2 SSD / PCIe NVMe, PCIe 3.0 x 4, 32Gb/s (e.g. xxxGB SSD M.2 PCIe NVMe)                                                                                 |                 |              |                |                     |       |              |                       | Battery                                                   | Lithium Polymer 4-cell (66Wh) or 6-cell (90Wh)                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Optical                 | None                                                                                                                                                                                                                                                                                                                                                             |                 |              |                |                     |       |              |                       | Max battery life <sup>10</sup> (MobileMark® 2014)         | <table><tr><td>Model</td><td>4-cell</td><td>6-cell</td></tr><tr><td>Discrete Graphics</td><td>7.1 hr</td><td>9.7 hr</td></tr><tr><td>Hybrid Graphics</td><td>9.6 hr</td><td>13.2 hr</td></tr></table>                                                                                                                                                       |                                                                                                                                                                          |           | Model           | 4-cell          | 6-cell      | Discrete Graphics | 7.1 hr          | 9.7 hr | Hybrid Graphics | 9.6 hr | 13.2 hr |
| Model                   | 4-cell                                                                                                                                                                                                                                                                                                                                                           | 6-cell          |              |                |                     |       |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Discrete Graphics       | 7.1 hr                                                                                                                                                                                                                                                                                                                                                           | 9.7 hr          |              |                |                     |       |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Hybrid Graphics         | 9.6 hr                                                                                                                                                                                                                                                                                                                                                           | 13.2 hr         |              |                |                     |       |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Ethernet                | <i>Non-vPro model:</i> Intel Ethernet Connection I219-V (Jacksonville)<br><i>vPro model:</i> Intel Ethernet Connection I219-LM (Jacksonville)                                                                                                                                                                                                                    |                 |              |                |                     |       |              |                       | AC adapter                                                | 170W slim tip AC adapter                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| WLAN <sup>4</sup>       | 11ac+BT, Intel Dual Band Wireless-AC 8260, 2x2, M.2 card                                                                                                                                                                                                                                                                                                         |                 |              |                |                     |       |              |                       | Preload                                                   | <i>Some:</i> Genuine Windows® 7 Professional 64<br><i>Some:</i> Windows 7 Professional 64 preinstalled through downgrade rights in Windows 10 Pro 64                                                                                                                                                                                                        |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Bluetooth™              | Bluetooth 4.1 wireless, integrated in Wi-Fi + Bluetooth combo adapter                                                                                                                                                                                                                                                                                            |                 |              |                |                     |       |              |                       |                                                           | <ul style="list-style-type: none"><li>• Lenovo Solution Center</li><li>• Lenovo SHAREit</li><li>• ThinkVantage Product Recovery</li><li>• Rescue and Recovery™</li><li>• ThinkVantage System Update</li><li>• Adobe® Reader®</li><li>• Microsoft® Office preloaded; purchase a product key to activate</li><li>• McAfee® LiveSafe™ (30-day trial)</li></ul> |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| WWAN (optional)         | Wireless WAN, Sierra Wireless EM7455, Qualcomm® 4G LTE-Advanced/DC-HSPA+/HSPA+/HSPA/UMTS/GNSS, M.2 card                                                                                                                                                                                                                                                          |                 |              |                |                     |       |              |                       |                                                           | <ul style="list-style-type: none"><li>• Microsoft® Office preloaded; purchase a product key to activate</li><li>• McAfee® LiveSafe™ (30-day trial)</li></ul>                                                                                                                                                                                                |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| SIM card                | Micro-SIM card slot                                                                                                                                                                                                                                                                                                                                              |                 |              |                |                     |       |              |                       |                                                           | For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a>                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Dimensions <sup>3</sup> | <i>WxDxH:</i> 14.86" x 9.93" x 0.96-1.16"; 377.4mm x 252.3mm x 24.5-29.4mm<br><i>WxDxH(Touch):</i> 14.86" x 9.93" x 1.02-1.21"; 377.4mm x 252.3mm x 25.8-30.7mm                                                                                                                                                                                                  |                 |              |                |                     |       |              |                       | Limited warranty <sup>12</sup>                            | One of the following, configurable by model: <ul style="list-style-type: none"><li>• 3-year/1-yr battery depot repair service</li><li>• 3-year/1-yr battery limited onsite service<sup>24</sup></li><li>• 3-year/1-yr battery limited onsite service, OID (Onsite International Delivery)</li></ul>                                                         |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Weight <sup>2</sup>     | <table><tr><td>Models</td><td>4-cell</td><td>6-cell</td></tr><tr><td>Non-touch</td><td>5.6 lb / 2.55kg</td><td>5.9 lb / 2.67kg</td></tr><tr><td>Multi-touch</td><td>6.2 lb / 2.82kg</td><td>6.4 lb / 2.90kg</td></tr></table>                                                                                                                                    |                 |              |                |                     |       |              |                       | Models                                                    | 4-cell                                                                                                                                                                                                                                                                                                                                                      | 6-cell                                                                                                                                                                   | Non-touch | 5.6 lb / 2.55kg | 5.9 lb / 2.67kg | Multi-touch | 6.2 lb / 2.82kg   | 6.4 lb / 2.90kg |        |                 |        |         |
| Models                  | 4-cell                                                                                                                                                                                                                                                                                                                                                           | 6-cell          |              |                |                     |       |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Non-touch               | 5.6 lb / 2.55kg                                                                                                                                                                                                                                                                                                                                                  | 5.9 lb / 2.67kg |              |                |                     |       |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Multi-touch             | 6.2 lb / 2.82kg                                                                                                                                                                                                                                                                                                                                                  | 6.4 lb / 2.90kg |              |                |                     |       |              |                       |                                                           |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
| Case material           | <i>Display cover:</i> Glass-Fiber Reinforced Plastic;<br><i>Bottom:</i> Magnesium/Aluminum                                                                                                                                                                                                                                                                       |                 |              |                |                     |       |              |                       | Mil-Spec test                                             | MIL-STD-810G military certification                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |
|                         |                                                                                                                                                                                                                                                                                                                                                                  |                 |              |                |                     |       |              |                       | Environment                                               | EPEAT™ Gold (US only); ENERGY STAR® 6.1; GREENGUARD®; RoHS-compliant                                                                                                                                                                                                                                                                                        |                                                                                                                                                                          |           |                 |                 |             |                   |                 |        |                 |        |         |

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