ThinkPad T450s Platform Specifications

Processor	5th Generation Intel® Core™ i5 / i7 Processor

Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Speed	Processor Graphics
i5-5200U			2.2 GHz	2.7 GHz	3MB		Intel HD Graphics 5500
i5-5300U	2	4	2.3 GHz	2.9 GHz	3MB	DDR3L-1600	
i7-5600U			2.6 GHz	3.2 GHz	4MB		

Graphics	Intel HD Graphics 5500 in processor only, or Intel HD Graphics 5500 in processor and NVIDIA GeForce® 940M, 1GB memory (discrete models are only available in Western Europe); supports external analog monitor via VGA and digital monitor via Mini DisplayPort; supports three independent displays; Max resolution: 3840x2160@60Hz (DP via mDP cable); 1920x1200@60Hz (VGA)
Chipset	Intel SoC (System on Chip) platform
Memory	12GB max[7] / PC3-12800 1600MHz DDR3L, non-parity, dual-channel capable, 4GB memory soldered to systemboard, one 204-pin SO-DIMM socket

Display	*Some:* 14.0" (355mm) HD+ (1600x900), anti-glare, LED backlight,
	   250 nits, 16:9 aspect ratio, 400:1 contrast ratio
	Some: 14.0" (355mm) FHD (1920x1080), anti-glare, LED backlight,
	   300 nits, 16:9 aspect ratio, 700:1 contrast ratio, IPS

Multi-touch *(opt)*	Capacitive-type multi-touch, supports 10-finger gesture, 264 nits
Storage	*Some:* SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high, removable, upgradable *Some:* HDD / SATA 6.0Gb/s, 2.5" wide, 7mm or 9.5mm high, removable, upgradable, Shock Mounted Hard Drive, Active Protection System™ *Some:* SSHD with 8GB NAND flash memory
M.2 SSD *(opt)*	Single-sided M.2 SSD, via M.2 card slot
Optical	None
Ethernet	*Non-vPro model:* Intel Ethernet Connection I218-V (Clarkville) *vPro model:* Intel Ethernet Connection I218-LM (Clarkville)
Bluetooth™	Bluetooth 4.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter
WLAN[4]	*One of the following, configurable by model:* • 11b/g/n, ThinkPad 11b/g/n, 2x2, Wi-Fi + Bluetooth combo adapter, M.2 card • 11b/g/n, Intel Wireless-N 7265, 2x2, Wi-Fi + BT, M.2 card (WE only) • 11a/b/g/n, Intel Dual Band Wireless-N 7265, 2x2, Wi-Fi + BT, M.2 card (WE only) • 11ac, Intel Dual Band Wireless-AC 7265, 2x2, Wi-Fi + BT adapter, M.2 card

WWAN *(optional)*	*One of the following, configurable by model:*
	• Wireless WAN upgradable
	• Wireless WAN, Ericsson® N5321,
	   HSPA+ 21Mbps/GSM/GPRS/EDGE, GPS, M.2 card (WE only)
	• Wireless WAN, Sierra Wireless EM7345,
	   Intel 4G LTE/HSPA/GSM/GPRS/EDGE, GPS, M.2 card

SIM card *(opt)*	AT&T® or Verizon® LTE (4G), contract required with service provider
Dimensions[3]	*14.0" (WxDxH):* 13.03" x 8.90" x 0.81"; 331mm x 226mm x 20.65mm *14.0" Touch (WxDxH):* 13.03" x 8.90" x 0.90"; 331mm x 226mm x 22.94mm

Weight[2]

Models	No + 3-cell	3-cell + 3-cell	3-cell + 6-cell
Integrated Non-touch	3.26 lb / 1.48 kg	3.49 lb / 1.59 kg	3.90 lb / 1.77 kg
Integrated Multi-touch	3.79 lb / 1.72 kg	4.02 lb / 1.82 kg	4.42 lb / 2.01 kg
Discrete Non-touch	3.27 lb / 1.48 kg	3.51 lb / 1.59 kg	3.91 lb / 1.77 kg
Discrete Multi-touch	3.80 lb / 1.72 kg	4.03 lb / 1.83 kg	4.43 lb / 2.01 kg

Case material	*Display cover:* Carbon-Fiber Reinforced Plastic; *Bottom:* Magnesium/Aluminum

Smart card reader	*Optional:* Smart card reader
Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC)
Ports	Three USB 3.0 (one Always On), VGA, Mini DisplayPort, Ethernet (RJ-45), Dock connector (integrated models only)
Camera	HD720p resolution, low light sensitive, fixed focus
Audio support	HD Audio, Realtek® ALC3232 codec / stereo speakers, 2W x 2 / dual array microphone, combo audio/microphone jack
Keyboard	6-row, spill-resistant, multimedia Fn keys, optional LED backlight
UltraNav™	TrackPoint® pointing device and buttonless glass surface touchpad, multi-touch
Security	Power-on password, hard disk password, supervisor password, security keyhole
Security chip	Trusted Platform Module, TCG 1.2-compliant
ThinkEngine	Delivers improved thermal and power efficiency, up to 30 day standby, faster resume time, enhanced security, as well as anti-tampering measures
vPro *(optional)*	Intel vPro Technology
Fingerprint reader	*Optional:* Fingerprint reader on the keyboard bezel, swipe sensor
Internal battery	*Optional:* Integrated Li-Ion or Li-Polymer 3-cell *(23Wh)*
External battery	Li-Ion 3-cell *(23Wh)* or 6-cell *(48Wh or 72Wh)*

Max battery life[10]

Models	3-cell + 3-cell	3-cell + 6-cell 48Wh	3-cell + 6-cell 72Wh
Integrated	10.16 hr	14.9 hr	19.9 hr
Discrete	10.5 hr	15.4 hr	20.6 hr

AC adapter	45W AC adapter, 65W Slim AC adapter, or 65W AC adapter

Preload	Windows® 7 Professional 64 preinstalled *Some:* Windows 8.1 64-bit
	through downgrade rights in *Some:* Windows 8.1 Pro 64-bit
	Windows 8.1 Pro 64-bit or *Some:* Windows 10 Pro 64
	Windows 10 Pro 64 • Lenovo Solution Center
	• Lenovo Solution Center • Lenovo SHAREit
	• Lenovo SHAREit • Lenovo REACHit
	• ThinkVantage Product Recovery • Lenovo Companion
	• Rescue and Recovery™ • Microsoft Office preloaded;
	• ThinkVantage System Update purchase a product key to activate
	• PC Device Stage • Norton Internet Security
	• Adobe® Reader® (30 days of virus definitions,
	• Microsoft® Office preloaded; Win8 w/o i5/i7 model)
	   purchase a product key to activate • McAfee® LiveSafe™ (30-day trial,
	• Norton™ Internet Security Win8 i5/i7 and Win10 model)
	   (30 days of virus definitions)

Limited warranty[12]	*One of the following, configurable by model:* • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service[24] • 3-year/1-yr battery limited onsite service, OID (Onsite International Delivery)
Environment	EPEAT™ Gold (US) or EPEAT Silver (WE); ENERGY STAR® 6.1; GREENGUARD®; RoHS-compliant