

ThinkPad W540 Platform Specifications

Product Specifications Reference (PSREF)

Positioning	<i>Mobile workstation; two spindles</i>								Audio support	HD Audio, Realtek® ALC3232 codec, Dolby® Home Theater® v4 / stereo speakers, 1W x 2 / dual array microphone, combo audio/microphone jack	
Processor	4th Generation Intel® Core™ i5 / i7 / i7 Extreme Processor								WLAN ⁴	One of the following, configurable by model:	
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Speed	Processor Graphics		<ul style="list-style-type: none"> • ThinkPad 11b/g/n, 2x2, Wi-Fi + Bluetooth combo adapter, M.2 card • Intel Wireless-N 7260, 2x2, Wi-Fi + BT combo adapter, M.2 card • Intel Dual Band Wireless-N 7260, 2x2, Wi-Fi + BT combo adapter, M.2 card • Intel Dual Band Wireless-AC 7260, 2x2, Wi-Fi + BT combo adapter, M.2 card 	
	i5-4200M	2	4	2.5 GHz	3.1 GHz	3MB	DDR3L-1600	Intel HD Graphics 4600			
	i5-4210M			2.6 GHz	3.2 GHz	3MB					
	i5-4330M			2.8 GHz	3.5 GHz	3MB					
	i7-4600M			2.9 GHz	3.6 GHz	4MB					
	i7-4700MQ	4	8	2.4 GHz	3.4 GHz	6MB					
	i7-4710MQ			2.5 GHz	3.5 GHz	6MB					
	i7-4800MQ			2.7 GHz	3.7 GHz	6MB					
	i7-4810MQ			2.8 GHz	3.8 GHz	6MB					
i7-4900MQ	2.8 GHz			3.8 GHz	8MB						
i7-4910MQ	2.9 GHz			3.9 GHz	8MB						
i7-4930MX	3 GHz	3.9 GHz	8MB								
Memory	<i>dual-core model:</i> 16GB max ⁷ , two 204-pin SO-DIMM sockets <i>quad-core model:</i> 32GB max, four 204-pin SO-DIMM sockets, only 4+4, 8+8, 4+4+4+4, and 8+8+8+8 combinations supported <i>All:</i> PC3-12800 1600MHz DDR3L, non-parity, dual-channel capable								SIM card (optional)	<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • AT&T® or Verizon® LTE (4G), contract required with service provider (US models) • Lenovo SIM, out-of-box service, pay-as-you-go via credit card, no contract required (WE models) • User selectable, contract required with service provider 	
Optical (optional)	DVD burner, 9.5mm Ultrabay slim, removable								Bluetooth™	Bluetooth 4.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter	
Ultrabay	One modular bay for removable devices (right side, cold swap), 9.5mm high, bottom access								Ethernet	Intel Ethernet Connection I217-LM (Clarkville)	
Storage	<i>Some:</i> Solid State Drive (SSD) / SATA 6.0Gb/s, 2.5" wide, 7mm high								NFC	<i>Optional:</i> Near Field Communication	
	<i>Some:</i> Hard Disk Drive (HDD) / SATA 6.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Active Protection System™								Security chip	Power-on password, hard disk password, supervisor password, security keyhole	
M.2 SSD	<i>All:</i> removable, upgradable, supports the second disk, Shock Mounted								vPro (optional)	Trusted Platform Module, TCG 1.2-compliant	
	<i>Some:</i> M.2 Solid State Drive (SSD), via M.2 card slot, exclusive with WWAN card								Fingerprint reader	<i>Optional:</i> Fingerprint reader on the palm rest, swipe sensor	
Widescreen display	<i>Some:</i> 15.6" (396mm) FHD (1920x1080) , anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio								Limited warranty ¹²		
Multi-touch	<i>Some:</i> 15.5" (394mm) 3K (2880x1620) , anti-glare, LED backlight, 350 nits, 16:9 aspect ratio, 1000:1 contrast ratio, IPS								<i>One of the following, configurable by model:</i> <ul style="list-style-type: none"> • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service²⁴ • 3-year/1-yr battery limited onsite service, IWS (International Warranty Service¹⁷) 		
	Color calibration	<i>None</i>								Preload	Windows® 7 Professional 64
Camera (optional)	<i>Optional:</i> Pantone® color calibrator by X-Rite® color calibration sensor in palm rest, LED indicator								preinstalled through downgrade rights in Windows 8 / 8.1 Pro 64-bit		
Graphics	NVIDIA® Optimus™ technology, auto-switch between discrete and integrated graphics, Intel HD Graphics 4600 in processor, and NVIDIA Quadro® K1100M or K2100M , PCI Express® x16, 2GB memory, supports external analog monitor via VGA and digital monitor via Mini DisplayPort / Thunderbolt™; supports three independent displays;								<i>Some:</i> Windows 8 / 8.1 64-bit <i>Some:</i> Windows 8 / 8.1 Pro 64-bit		
	<i>Max external resolution:</i> 3840x2160@60Hz (DisplayPort via MiniDP cable); 3840x2160@60Hz (Thunderbolt); 1920x1200@60Hz (VGA)								<ul style="list-style-type: none"> • Lenovo Solution Center • ThinkVantage Product Recovery • Rescue and Recovery™ • ThinkVantage System Update • Lenovo Cloud Storage by SugarSync • PC Device Stage • Adobe® Reader® • Nitro Pro • Evernote® • Skype™ • Microsoft® Office preloaded; purchase a product key to activate • Norton™ Internet Security (30 days of virus definitions) • Cyberlink PowerDVD (DVD±RW) • Cyberlink Power2Go (DVD±RW) • Cyberlink PowerProducer (DVD±RW) 		
Keyboard UltraNav™	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight TrackPoint® pointing device and Mylar surface touchpad, integrated five buttons, multi-touch								<ul style="list-style-type: none"> • Lenovo Solution Center • ThinkVantage Product Recovery • Rescue and Recovery™ • ThinkVantage System Update • Lenovo Cloud Storage by SugarSync • PC Device Stage • Adobe® Reader® • Nitro Pro • Evernote® • Skype™ • Microsoft® Office preloaded; purchase a product key to activate • Norton™ Internet Security (30 days of virus definitions) • Cyberlink PowerDVD (DVD±RW) • Cyberlink Power2Go (DVD±RW) • Cyberlink PowerProducer (DVD±RW) 		
ThinkLight™	<i>None</i>								<ul style="list-style-type: none"> • Lenovo Support • Lenovo Companion • ThinkVantage System Update • Lenovo Reach (Windows 8.1 model) • Hightail - Metro (Windows 8.1 model) • Lenovo Cloud Storage by SugarSync - Metro (Windows 8 model) • Lenovo Cloud Storage by SugarSync (Windows 8 model) • PC Device Stage • AccuWeather • Amazon Kindle • Nitro Pro • Evernote • Skype • Rara Streaming • Norton Studio • Microsoft Office preloaded; purchase a product key to activate • Norton Internet Security (30 days of virus definitions) • Cyberlink PowerDVD (DVD±RW) • Cyberlink Power2Go (DVD±RW) • Cyberlink PowerProducer (DVD±RW) 		
Dimensions ³	15.6W" (WxDxH): 14.83" x 9.77" x 1.10-1.16"; 376.6mm x 248.1mm x 27.9-29.5mm								<i>For ISV certifications, please visit www.lenovo.com/support/ISV</i>		
Weight ²	6-cell: starting at 5.57 lb (2.53kg); 9-cell: starting at 5.95 lb (2.70kg)								Environment	EPEAT™ Gold; ENERGY STAR® 6.0; RoHS-compliant	
Case material	Glass-Fiber Reinforced Plastic										
Battery type	Li-Ion 6-cell (56Wh) or 9-cell (99.9Wh), HW Authentication										
Max battery life ¹⁰	6-cell: up to 6.2 hr; 9-cell: up to 11.1 hr										
AC adapter	<i>dual-core:</i> 135-watt AC adapter; <i>quad-core:</i> 170-watt AC adapter										
Chipset	Mobile Intel QM87 Express Chipset										
ExpressCard	One slot (ExpressCard/34)										
Smart card reader	<i>Optional:</i> Smart card reader										
Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card										
Ports	Two USB 3.0, two USB 2.0 (one Always On), VGA, Mini DisplayPort / Thunderbolt, Ethernet (RJ-45), Dock connector										

Model	20BH004Q++
Product	W540
Region	WE
Machine Type	20BH
TopSeller	No
Processor	i7-4800MQ (4C, 2.7 / 3.7GHz, 6MB, 1600MHz)
vPro	vPro
Graphics	NVIDIA Quadro K1100M
Memory	4GBx2
Display	15.6" FHD (1920x1080)
Storage	128GB SSD
RAID	No
Optical	DVD±RW
WLAN &Bluetooth	Intel 7260 a/b/g/n + BT4.0
WWAN / M.2 SSD	WWAN upgradable
SIM Card	None
Smart Card Reader	None
Camera	720p
Backlit Keyboard	Backlit Keyboard
Numeric Keypad	Numeric Keypad
Fingerprint Reader	Fingerprint Reader
NFC	None
Color Calibrator	None
Battery Cells	9-cell (99.9Wh)
Power Adapter (watt)	170W
Preload	Windows 8 Pro 64-bit
Base Warranty	3-year depot
Global	Yes
Ann Date (mm/yy)	04/14

